

Buying A NAS Or SAN System

Hot New Features & Evaluation Advice When Buying A Storage System

by Kurt Marko
• • •

THE STORAGE BUSINESS is booming, with the industry enjoying sustained double-digit revenue growth. It's hard to tell which is increasing faster: the storage requirements of the average company, the capacity of new disks and systems, or the number of storage products—each addressing ever more specialized niches, ranging from consumer-oriented media servers to file and email storage for SMEs to clustered storage servers for online transaction processing. Given such growing storage needs, there's a good chance that shopping for storage products will be in every IT manager's future. Now that networked storage, with its increased flexibility and efficiency, has displaced DAS (direct-attached storage) for most uses, it's likely



that the shopping list will include devices supporting a SAN (storage-area network), NAS (network-attached storage), or both.

The intensely competitive storage market means that there are a plethora of attractive alternatives for any set of requirements; however, this abundance of choice means it's easy to get overwhelmed by the complexity of features, conflicting manufacturers' claims, and industry jargon. Advice from industry experts can help cut through the confusion and focus the SAN and NAS buyer on the most important product trends, technologies, and purchase criteria before kicking the tires on his next storage purchases.

Tips When Evaluating Storage Hardware Solutions

The diversity of the storage market implies that some buying tips are more appropriate for larger companies with more complex requirements, while others will be most germane to small offices with limited budgets and technical expertise; thus, the following tips are in no particular order of importance.

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Phishing Response Strategies

What Can Your SME Do To Fight The Fraud?

by Joe Rudich
• • •

THE SCOPE OF INFORMATION security has expanded almost as rapidly as the importance of offering online services. Ten years ago, stores, banks, and other retailers were developing customer relations on the Internet. Many have since succeeded, but with reports of identity theft and other online fraud on the rise, those same organizations are fighting to keep online customers—and their confidence—as well as their own money and valuable assets.

When Internet business was first developing, corporate information security

planners worried about the strength of their firewalls, authentication protocols, and other defenses protecting their core network and information resources. It would be arrogant to suggest protection against such direct attacks has been mastered; far too many attacks continue to succeed using frontal assault on networks. Yet many hackers trying to steal from or illegally access networks have turned away from the “front door” and are working through an

avenue once considered beyond the protection of corporate information security: users in their own homes.

“Black hat hackers have figured out that data centers and public Web servers usually have a hard outer shell; they're pretty well-protected and monitored,” says Ron Nguyen, a member of Foundstone's (www.foundstone.com) “Ultimate Hacking” education team. “Users, on the other hand, are

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Hackers are working through an avenue once considered beyond the protection of corporate information security: users in their own homes.

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IT Buying Guides

Are you in charge of upgrading existing equipment or buying new equipment for your data center but don't know where to begin? We talked with experts to come up with the best strategies and tips for buying products in several areas.

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TECH & TRENDS

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SMEs can hardly afford to ignore phishing, even if it takes place outside their traditional security “core.” The hard costs of fraudulent account access are high and growing.

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While the large enterprise can afford to devote individuals or teams to look after best-of-breed tools such as antivirus, antispayware, and firewalls, an SME doesn't have the administrative resources to worry about a large set of divergent tools.

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With good encryption, it is nearly impossible to recover secured data. That's why good key management is required.

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■ **Arkeia Software** released its EdgeFort 300 series, an all-in-one, appliance-based federated data-protection product. ■ **CipherMax** announced its CM140T integrated storage encryption solution to manage legacy and encrypting tape devices seamlessly through a common key management system. ■ **CXtech** introduced CABLExpress fiber enclosures that provide high-density connections in the smallest space possible, saving data center users time and money. ■ **Infoblox** announced the Infoblox IPAM WinConnect system, an IP address management appliance with integrated software support for Microsoft DNS and DHCP services. ■ **iStor Networks** introduced the integraStor family of iSCSI storage arrays. ■ **KACE** announced the latest products in its KBOX 1000 Series Systems Management and KBOX 2000 Series Systems Deployment appliances. ■ The new T1700 KVM Drawer from **Raritan** has a 17-inch, 1,280 x 1,024 LCD; a mouse touchpad; and a keyboard in a 1U rackmount design. ■ **SoftLayer** released Storage-Layer, a new storage and data backup service.

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STORAGE

AUGUST 10, 2007

Virtual RAID Boosts Video Surveillance Storage

Pivot3 Enters The Market With An IP-based RAID Platform

START-UP PIVOT3 has entered the scalable network storage market with a “virtual distributed RAID” platform, which the company says can slash storage infrastructure costs by half while improving scalability and data availability.

The RAIGE (RAID Across Independent Gigabit Ethernet) storage cluster is the first system from Pivot3 based on a block-level virtualization architecture that eliminates



the need for traditional RAID hardware and storage controllers. Data-protected storage is supported across networked nodes, called Databanks, which are built using x86-based servers connected by Gigabit Ethernet.

“This is an alternative that not only can reduce cost up to 50% but can also provide five times or more the performance of traditional storage,” says Jeffrey Bell, vice president of marketing for Pivot3.

The ability for RAIGE to simply and cost-effectively handle data-intensive application workloads has made it attractive to customers within the video surveillance space. Breaking into that market is requiring Pivot3 to work within the existing partner community, a practice the company is likely to continue to use as it targets additional markets.

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A10 Networks' AX Series Next-Generation Server Load Balancer Provides Industry's Best Price/Performance



TWO AX SERIES switches from A10 Networks are designed to provide reliable, cost-effective application-delivery platforms.

A10's AX Series is the industry's best price/performance advanced traffic manager, helping enterprises maximize application availability through a scalable, high-performance application delivery platform.

The AX's ACOS (Advanced Core Operating System) architecture is revolutionary by market standards because of its native multisystems support, which includes an optimized multi-CPU architecture built from the ground up designed for performance, scalability, and reliability.

The AX's ACOS architecture scales performance across multiple decoupled CPUs and specialized programmable ASICs linearly to ensure maximum scalable performance, including when all of the features are turned on. The AX Series' aRule

Advanced Scripting technology provides ultimate policy creation flexibility to deliver rich traffic inspection and switching capabilities, helping organizations adapt to ever-changing conditions and application types.

The end result is a switch with uncompromised performance even when all features are turned on, which helps organizations reduce data center power, server, and rack space requirements. Plus, all features are included in the standard list price.

The two newest AX Series appliances, 2000 and 2100, are 2U appliances designed for enterprise data centers and server farms. The AX 2000 has two CPUs, 2GB of memory, eight Gigabit over copper ports, two G small-form factor pluggable fiber ports, and an 80GB hard drive. The AX 2100 has those same components, plus an additional two CPUs and two G small-form factor

pluggable fiber ports; the 2100 also has dual 80GB RAID 1 hard drives.

All AX models feature carrier-grade hardware, the industry's best SSL and Layer 4-7 price/performance, support for IPv4 and IPv6, and an industry-standard command-line interface and easy-to-use GUI.

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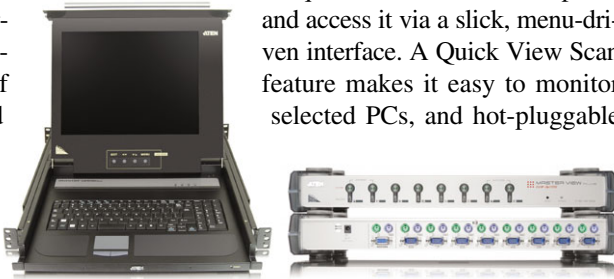
TODAY'S DATA CENTERS require convenient, space-saving, streamlined KVM equipment. ATEN's 17" Single-Rail LCD Integrated Console and MasterView KVM bundle is designed with those needs in mind.

ATEN's economy LCD KVM console, CL1000M, integrates a keyboard, 17-inch LCD, and touchpad in a 1U Slideaway housing. Setup is fast and easy. There is no software to configure, no installation routines, and no incompatibility problems. Slide the console module section out and flip up the cover, and you are ready to work.

When finished, flip down the cover and slide the console module back into the rack.

By using the CL1000M to manage your installation, you save space; eliminate the expense of having to purchase a separate keyboard, monitor, and mouse for each PC if attaching to a KVM switch; and can take advantage of upgrading your current system

ATEN is now bundling the CL1000M with an eight-port MasterView Plus,



which helps reduce the need for redundant hardware. With the MasterView Plus, you can control up to 512 computers with a single keyboard, monitor, and mouse. And it requires no software.

MasterView Plus is more than a simple eight-port KVM switch. A built-in Auto-Scan mode lets you monitor every attached computer for a specified amount of time, while the on-screen display lets you assign a unique name to each computer and access it via a slick, menu-driven interface. A Quick View Scan feature makes it easy to monitor selected PCs, and hot-pluggable

capabilities mean you can add or remove PCs for maintenance without powering down the switch. The MasterView's 1U, 19-inch rack-mountable casing and status-monitoring LEDs make it ideal for server rooms or other multicomputer environments.

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NEWS



Oracle Offers To Buy BEA Systems

TO STAY A STRONG competitor to Microsoft and SAP, Oracle offered to purchase BEA Systems for \$17 per share, or approximately \$6.66 billion. However, in a letter sent to Oracle President Charles Phillips, BEA refused the offer, saying, “It is apparent to our Board, however, that BEA is worth substantially more to Oracle, to others, and importantly, to our shareholders than the price indicated in your letter.” The offer marked a 25% premium over recent closing stock prices for the company. BEA Systems has products that are used in transaction processing, billing, customer service, provisioning, and securities trading, including software and middleware used by software developers to establish systems where other applications are able to operate.

Acer/Gateway Acquisition Complete

ACER IS OFFICIALLY THE WORLD’S third largest PC vendor, behind HP and Dell, after finalizing its acquisition of Gateway. Acer announced in August its plans to purchase Gateway for about \$710 million. Since then the deal has come under fire, including suits from two groups of Gateway investors who claimed the \$1.90 per-share price offered was “inadequate and unfair.” Gateway will function as a subsidiary of Acer and will continue to use its own name. Acer will also assume control of Packard Bell, which Gateway had previously announced it would acquire.

Oracle Acquires LogicalApps

IN LINE WITH ORACLE’S vision of offering a wider variety of products primarily to its current large customers, the company plans to purchase LogicalApps. With the purchase, Oracle will expand its products for governance and compliance, as LogicalApps’ software specializes in helping businesses manage compliance with complex regulations. Oracle says it has deployed LogicalApps’ software hundreds of times and that the software is already optimized to be used with the company’s applications. After the acquisition, slated to close next month, Oracle will continue investing in LogicalApps’ software and will continue supporting its customers. Financial terms were not disclosed.

Google Buys Jaiku

IN A MOVE THAT INCREASES its ability to provide its users with more mobile phone-accessible services, Google recently announced it has purchased Jaiku. The company makes the mobile phone software application Jaiku Mobile, which enables users to post and browse short messages that the company calls “jaikus.” In addition to access via mobile phones, users can utilize the service through the Internet or IM programs. Although current users will continue to be able to access the service, new users will have to wait while Google prepares to expand the service. At that time, customers will be able to sign up for an invitation for the service.

Worldwide IT Spending To Reach New Record

THIS YEAR IS ON TRACK TO MARK the beginning of a new era in IT, as Gartner predicts worldwide spending will top \$3 trillion. More specifically, Gartner has forecast spending of \$3.1 trillion, up 8% from last year, and says next year’s spending will reach \$3.3 trillion. Gartner says 33% of IT spending is in countries besides Japan, Western Europe, and North America, and technology spending is growing rapidly in developing countries. Areas that will see the most growth in end-user spending include software, services, and mobility; these categories accounted for 57% of IT spending last year and are forecast to grow to 60% next year and 63% in 2011.

Intel Reports Profit In Q3, Replaces CFO & Plans Job Cuts

INTEL IS ATTRIBUTING AN INCREASE in its third-quarter revenue to a spike in the shipments of microprocessors. The company’s Q3 revenue was \$10.1 billion, which is a 15% increase from the same period a year ago. Net income for Intel is reported at \$1.9 billion, for a 43% increase from last year. In other Intel news, CFO Andy Bryant has been promoted to the role of chief administrative officer. Former Assistant CFO Stacy Smith will replace Bryant as CFO. Reductions in the Intel workforce will continue next quarter, with an expected 2,000 layoffs, which follows a reduction of 2,000 employees during the third quarter.

HP Agrees To Settle Backdating Lawsuit

LAST YEAR, HP bought Mercury Interactive, a company that had to restate its earnings for fiscal years 2002, 2003, and 2004 because the originals failed to record compensation from internal stock-option grants. Mercury Pension Fund Group, a group of pension

funds that hold Mercury stock, filed a lawsuit claiming former executives of Mercury Interactive incorrectly backdated stock options. Now HP has agreed to settle the suit for \$117.5 million, a figure that is six times higher than any other backdating settlements to date. The judge for the case at the U.S. District Court for the Northern District of California has yet to approve the settlement.

IBM Reports Fiscal Third-Quarter Profit

ALTHOUGH IBM SAW A DECREASE in its hardware revenue for its fiscal third quarter, solid growth in its services business made up for it, so the company ended the quarter with profit of \$2.36 billion, or \$1.68 per share, up from last year’s \$2.22 billion, or \$1.45 a share. Revenue for the same quarter a year ago was \$22.6 billion, while this year’s grew 7% to top \$24.1 billion. Revenue in IBM’s Systems and Technology segment, the base for its hardware business, was down 10.4% for the quarter, while its Global Technology Services and Global Business Services revenue grew by double digits, up 13% and 16%, respectively.

Red Hat, Novell Sued

RED HAT AND NOVELL are being accused of infringing on a 1991 patent for a “user interface with multiple workspaces for sharing display system objects.” The suit is being brought by IP Innovation and Technology Licensing, two organizations that acquire and license intellectual property and patented technologies. The two groups say Red Hat and Novell infringe on the 1991 patent and two others in their Red Hat Linux, Novell Suse Linux Enterprise Desktop, and Novell Suse Linux Enterprise Server applications. IP Innovation and Technology Licensing are seeking compensation for damages and a permanent injunction prohibiting Red Hat and Novell from selling the products.

Google Still Tops In Search

MORE THAN 750 MILLION PEOPLE 15 years old and older conducted 61 billion searches worldwide in August, according to research firm comScore. That’s an average of about 80 searches per user. Google was used for more than 37 billion of those searches; Yahoo! was in second place with about 8.5 billion searches, followed by Chinese language Baidu.com with 3.2 billion searches and Microsoft with 2.1 billion searches. The Asia-Pacific region had the highest number of unique searchers, at about 258 million users conducting 20.3 billion searches, followed by Europe with 210 million users performing 17.8 billion searches, and North America with 206 million searchers conducting 15.9 billion searches.

Yahoo! Q3 Earnings

YAHOO! SAW A DECREASE in its net income during the third quarter. The company reported \$151 million, or 11 cents a share, in net income, which is down from \$159 million, or 11 cents a share, during the same quarter last year. Revenue for the company was up, however, reported at \$1.76 billion, which is an increase of 12% from Q3 last year.

AOL Lays Off 2,000

AOL ANNOUNCED it will lay off 2,000 employees, or about 20% of its workforce, before the end of the year. About 750 of the job cuts will be at the company’s main office in Dulles, Va., with about 1,200 of the total cuts coming from within the United States. The announcement comes as AOL is trying to move from being a subscription-based dial-up ISP to a global advertising-based Web services company. In a memo to employees, AOL CEO Randy Falco said the realignment would allow AOL to increase its investment in high-growth areas, including Platform-A, publishing, and access.

Upcoming IT Events

- NOVEMBER -**
ITEC Kansas City
November 7-8
Overland Park, Kan.
www.goitec.com
.....
ITEC Philadelphia
November 14-15
Valley Forge, Pa.
www.goitec.com
.....
Gartner Annual Data Center Conference
November 27-30
Las Vegas, Nev.
www.gartner.com/it/page.jsp?id=502390&tab=overview
.....
ITEC Portland
November 28-29
Portland, Ore.
www.goitec.com
- DECEMBER -**
Gartner CIO Summit
December 2-4
Amelia Island, Fla.
www.gartner.com/it/page.jsp?id=503856&tab=overview
.....
ITEC Atlanta
December 5-6
Atlanta, Ga.
www.goitec.com
.....
ITC East
December 5-6
Harrisburg, Pa.
www.govresources.com
- JANUARY -**
Storage Visions 2008 Conference
January 5-6
Las Vegas, Nev.
www.storagevisions.com
.....
Florida Educational Technology Conference
January 22-25
Orlando, Fla.
www.fetc.org
.....
WCA International Symposium & Business Expo
January 29-Feb. 1
San Jose, Calif.
www.wcai.com
- FEBRUARY -**
SCALE 6x - 2008 Southern California Linux Expo
February 8-10
Los Angeles, Calif.
www.socallinuxexpo.org
.....
Comptel Plus Spring 2008 Convention & Expo
February 24-27
Nashville, Tenn.
www.comptel.org
- MARCH -**
Gartner Wireless & Mobile Summit
March 3-5
Chicago, Ill.
www.gartner.com/it/page.jsp?id=502608&tab=overview

WATCH THE STOCKS

This information provides a quick glimpse of current and historical stock prices and trends for 16 major companies in the technology market.

Company	Symbol	Year Ago	Oct. 10 \$	Oct. 17 \$	% change from previous week
Avaya	AV	\$11.84	\$17.12	\$17.35	▲ 1.34%
BEA Systems	BEAS	\$16.25	\$13.86	\$18.35	▲ 32.4%
Computer Associates	CA	\$24.91	\$26.71	\$26.10	▼ 2.28%
Cisco Systems	CSCO	\$24.43	\$33.27	\$32.46	▼ 2.43%
Dell	DELL	\$23.60	\$28.04	\$28.62	▲ 2.07%
Electronic Data Systems	EDS	\$24.43	\$23.20	\$22.66	▼ 2.33%
Google	GOOG	\$480.78	\$625.39	\$633.48	▲ 1.29%
HP	HPQ	\$39.87	\$52.25	\$52.54	▲ 0.56%
IBM	IBM	\$91.56	\$118.62	\$115.78	▼ 2.39%
Intel	INTC	\$21.45	\$25.88	\$26.72	▲ 3.25%
McAfee	MFE	\$27.14	\$40.02	\$38.65	▼ 3.42%
Microsoft	MSFT	\$28.45	\$30.23	\$31.08	▲ 2.81%
Oracle	ORCL	\$19.15	\$22.92	\$21.49	▼ 6.24%
Red Hat Software	RHT	\$18.87	\$21.52	\$20.86	▼ 3.07%
Sun Microsystems	JAVA	\$5.20	\$6	\$5.99	▼ 0.17%
Symantec	SYMC	\$21	\$21	\$20.58	▼ 2%

NOTE: This information is meant for reference only and should not be used as a basis for buy/sell decisions.

SIX QUICK TIPS

Perfect Your Data Center Planning

by Christian Perry

• • •

FEW TASKS RIVAL THE COMPLEXITY of data center planning, and managers charged with undertaking this duty can quickly become overwhelmed with the sheer number of requirements involved to build the perfect beast. The following tips can ease that burden with guidelines for developing a strategic plan for creating flexible, dynamic data centers that can sufficiently support the needs of any SME.

Borrow From The Big Boys

According to Nestor G. Cruz, general manager of Achievo’s (www.achievo.com) North America Business Group, small and mid-sized enterprises can benefit from the experiences of larger data centers by assimilating successful tactics used in those spaces. In fact, he says that scaling down a plan originally intended for a large data center is a perfectly feasible strategy. “This would provide immediate actionable items from the plan, assuming there is an understanding of the process around developing the plan,” Cruz says. “But finding a plan is often problematic. There are

books available, and there are outlines floating around in the industry that you can get from friends. Sometimes somebody in a large corporation develops a plan that somehow gets out and becomes available. But that is hit or miss.”

The alternative, he says, is to hire a consulting intermediary with experience in data center planning. For example, some consulting companies are composed of retired experts who are still willing to deliver effective information. But Cruz warns that SMEs should not depend entirely on consultants to plan their data centers.

“It’s important that you take a stab at it first. You don’t want to learn with a consultant. You want to learn as much as you can then work with the consultant to refine it further,” he says.

Plan For The Unexpected

Regardless of an enterprise’s efforts to cover all possible steps in its plans, it must expect—and plan for—the unexpected, says Robert J. Offley, owner, president, and CEO of CentriLogic (www.centrilogic.com). “Is there a kitchen or bathroom above the data center? Even if it’s not

directly above, you have to think of how you will handle water leaks from a bathroom, a kitchen, or the roof,” Offley says.

UPS systems occasionally need to be shut down for maintenance, but managers have to determine what will happen if those systems actually die, he explains. Companies must also plan for what they’d do in case of a fire because, Offley notes, even servers can create electrical fires.

“Can [the center] be burglarized? What if a sewage company starts digging in front of your building and cuts your network off? What if there is an earthquake—do you have your equipment bolted down? Will it survive a good jolt? Will the power remain intact? Will the water pipe burst? These are just a sample of the various questions that can, and should, be considered when developing plans for a data center,” he says.

Put The Project In The Plan

Common sense would suggest that the creation of most data centers occurs with an actual completed plan in hand. But that’s not always the case, says Mark Mahre, vice president of process management at Optimus Solutions (www.optimusolutions.com). He says that, surprisingly, most plans are halfway completed, but it’s imperative to have a detailed project plan that details all the steps taken between Point A and Point B and from multiple points.

“In that plan, you’re going to cover several major areas,” Mahre says. “One of the most important [areas] is a contingency plan. If something happens that you didn’t expect, you don’t have to bail or be down, but you have something in place that you can continue business as usual. What Optimus tends to look at is something like swing gear [that is, rentals] or having hot spares ready to go if something should happen to that pallet, truck, or equipment.”

When creating a data center project plan, Mahre explains that three key components must be included. The first is people: “Businesses need to ask, ‘Where are your people located? What are their roles and responsibilities? What are they doing for the data center moves?’” Another key component is process, which Mahre notes is as valuable as the blueprints that detail the building of a new house. That process must be mapped from end to end, be detailed, and be reviewed by everyone involved.

Finally, the project plan must include information on the technology that’s moving into the data center, including the data

itself and the hardware. “Data needs to be handled in a very systematic way, and you also need to have some testing completed before actually transferring the data. In addition, businesses should ask, ‘Do we want to move like-for-like? Or if we are

BONUS TIPS

Create an e-building. Smart Building Solutions (www.smartbuildingsolutions.com), which specializes in designing, building, and managing data centers, advocates the creation of “e-buildings,” which the company says will “attract and motivate employees, foster teamwork, enhance productivity and communication,” and project a strong external image. These buildings rely heavily on flexibility through the use of raised access flooring, plug-and-play wiring, under-floor HVAC systems, and advanced power systems.

Be safe, not sorry. CentriLogic’s (www.centrilogic.com) Robert J. Offley says that mission-critical data centers must include both resiliency and redundancy to protect their data. “If building this yourself is not feasible, you should house your data in [an outsourced] data center that is equipped with redundant UPSes, redundant HVAC, and redundant network equipment. If you choose this option, the only thing you have to make redundant is your equipment, and even this can be usually leased from the data center provider,” Offley says.

going to move anyway, do we want to do some upgrading and increase our ping, pipe, and power?” he says.

Smart Staffing

Enterprises can reduce overhead by opting for a fully managed data center instead of hiring their own staff to be onsite, says Epiq Systems’ (www.epiqsystems.com) Henry Denis, director of IT for eDiscovery. He notes that certain colocation facilities provide gyms, showers, and changing rooms to accommodate a 24/7 staffing system.

“In addition, ensure there are reasonably priced hotel rooms nearby,” Denis says. “Data migration normally happens at night so as to not disturb normal business operations, and you’ll want to provide those responsible for the migration a place close by to sleep.”

He also suggests that in the case of migrations, key management teams should have access to the full documentation of the enterprise’s cabling plant and server layout. Further, a flexible cable/asset management software tool will help managers facilitate the planning. 

BEST RETURN ON INVESTMENT:

Plan For Air Exchange

○ Because heat will be prevalent in any new data center, it’s crucial for an enterprise to identify the infrastructure support for air in and air out, says Geoff Lyon, CEO for CoolIT Systems (www.coolitsystems.com). He points to the rule of thumb that says for every 10 degrees Celsius the temperature is reduced, the effective useful life of equipment is doubled.

“Regardless of what thermal strategy is used, the heat will eventually need to get out of the

building—unless diverted to supply heat to the building in cold months—so when the hot air goes out, return air will need to come in,” he says.

Liquid cooling can prove particularly helpful, he says, because it can efficiently transport the heat to the location that is easiest to deposit with no detrimental effects. Properly planning the air exchange will help to ease future implementation of liquid cooling.

BEST WISDOM:

Use The Best Staff Start To Finish

○ According to Optimus Solutions’ (www.optimussolutions.com) Mark Mahre, enterprises need not only a very solid project plan, but they also need to treat the move like a project. This requires both smart employees to plan the move and smart employees to execute it.

“Most times, what businesses do is have their smartest people plan the data move and then

they put the low-end guys to execute it—and that’s when you have problems,” Mahre says. “We recommend that even though your top guys are involved in larger or high-initiative projects, they need to be taken off those assignments and available for this move.”

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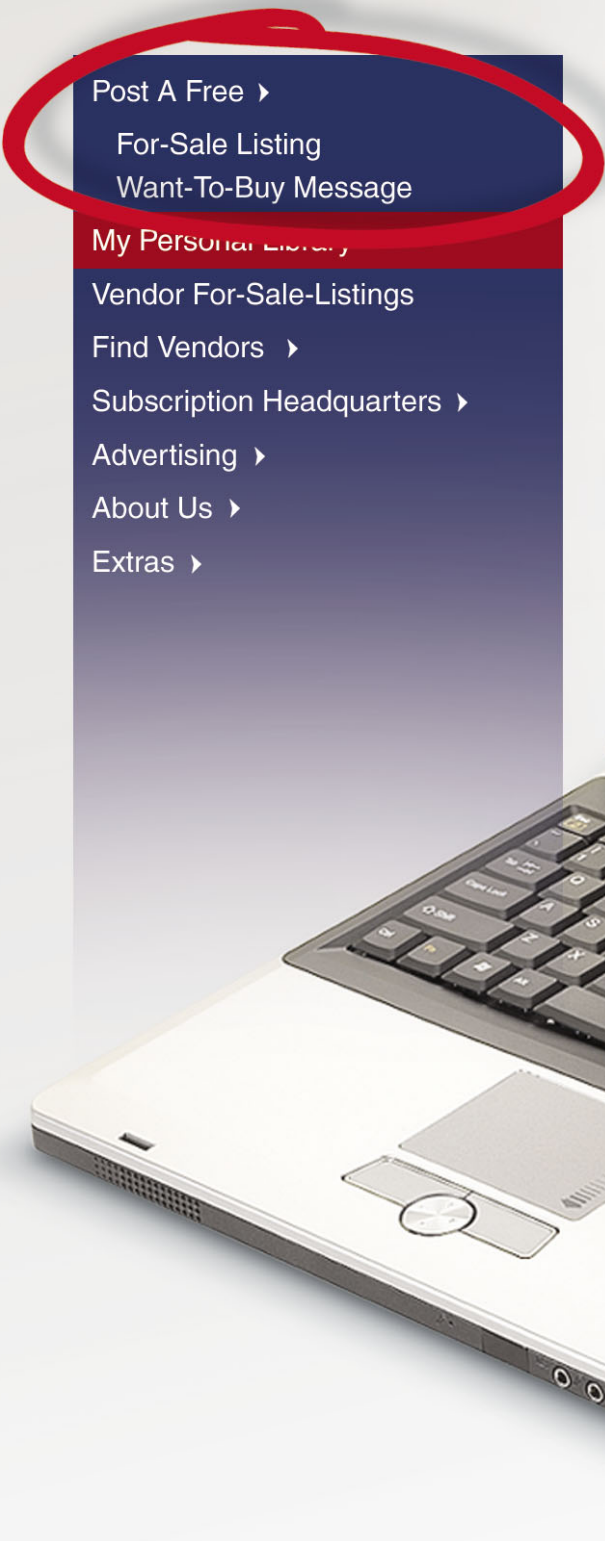
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Interoperability Trumps Cost

A Sound Strategy For Purchasing VoIP Equipment

by Sandra Kay Miller

PRICE IS ALWAYS A STICKING POINT for any organization, especially budget-conscious SMEs, when it comes to purchasing new equipment for emerging technologies.

However, when considering equipment for VoIP deployments, Bob Liu of Zultys Technologies (www.zultys.com), a Sunnyvale, Calif.,-based company that designs and manufactures VoIP equipment, has a different opinion. “One of the most important factors, more so than price, in a CIO’s or CTO’s decision making when it comes to choosing VoIP equipment is interoperability and the long-term road map for the investment they’re making,” he says.

Instead of shopping for the least-expensive solution, there are several factors that should be carefully researched prior to purchase. These include interoperability, future scalability, integration with existing communications infrastructure, feature set, manageability, redundancy, and QoS.

Interoperability

One way to ensure interoperability is through the use of open standards, such as the SIP (Session Initiation Protocol), which has become the de facto VoIP industry standard. “Definitely, the open-source movement is an important industry standard for the decision-making process,” says Liu. Zultys has maintained its dedication to open source by having built its products on a Linux plat-

form lending to cost-effective maintenance of the system.

Another commonly supported protocol in VoIP equipment is H.323, the inclusive international standard for multimedia communication over packet-switched networks defined by the International Telecommunication Union in 1996, approximately the same time SIP was introduced by the Internet Engineering Task Force. Fundamentally, SIP and H.323 offer the same functionality.

Although supported by a limited number of equipment manufacturers at this time, IAX2 (Inter-Asterisk eXchange version 2) is an up-and-coming VoIP protocol that was developed to overcome issues surrounding packet transversal over NAT (Network Address Translation) often encountered by SIP and H.323. At this time, SIP and H.323 are published standards, and IAX2 is not, although there are working drafts of the specifications in progress.

Ease Of Integration

The ability to integrate with existing infrastructure is another big item that can quickly increase VoIP equipment’s return on investment and overall value. For

example, Liu points out that it’s not practical for a legacy call center to rip out its old PBX (private branch exchange) system and put in a PSTN (public switched telephone network) gateway that enables it to tie all the phone lines into a new VoIP installation. “The very concept at Zultys is to utilize—to reuse the assets in the company, such as the IT network—and to extract the



value of the investment the company made long ago and use that as the foundation of the communications system,” he says.

Feature Sets

Companies, especially those with call centers and sales organizations, are looking for rich feature sets, especially what Liu refers to as the “four Ps”—paging, pickup, park, and provision. “Those features should be inherent with every full-scale enterprise system. If they’re not, obviously then you want to keep shopping around,” he notes.

Redundancy

In communications systems, redundancy is critical; however, VoIP installations add an extra layer on to keeping the system functioning in the event of a failure. In addition to having mirrored systems from one to roll over to the other in real time, VoIP installations must also include redundancy in its stored data, phone mapping, and internal network topography.

Management

Manageability is a key factor in the decision-making process. As SMEs are often strapped for IT personnel, having a VoIP system that is easy to deploy, administrate, and maintain can more than make up for a higher initial investment. Bob Mayer, vice

president of sales and marketing at Bandspeed (www.bandspeed.com), a Texas-based company that manufactures advanced Wi-Fi products for the growing wireless VoIP sector, has found that centralized management is very helpful and convenient, especially during deployments of new services across an enterprise. “When you’re assigning an SSID, security settings, tying that to a specific VLAN, and giving a specific password all across multiple access points, it’s really nice to do all the settings at once and then deploy them to multiple APs instead of having to do it multiple times and hoping that you didn’t ‘fat finger’ it once. It can be really time-consuming diagnosing a problem as simple as missing a capital letter in a password, and that can lead to dropped calls when a VoIP handset tries to associate with an AP but has the wrong password.”

To keep it simple, Zultys has created an intuitive user interface that allows the system administrator to easily provision and set up hunt groups (operator groups that can find people in multiple locations). Often, traditional PBX systems require admins to learn Unix or Linux in order to get the full functionality out of the equipment.

Quality Of Service

Poor communication equipment performance can quickly equate to lost business, so it is important to choose products that include features specific to QoS. Mayer offered a checklist of features that wireless VoIP should have—fast roaming between access points done with full security enabled and support for both load limits and load balancing.

Scalability

For both wired and wireless VoIP installations, scalability to allow for future growth should be taken into account. If the VoIP equipment purchased today based solely on cost is obsolete due to growth before its useful life cycle is over, investing in new equipment will far exceed the initial savings. Especially in wireless VoIP installations, Mayer points out that equipment can rapidly reach load limits, necessitating the need for equipment to scale easily.

Regardless of the type of deployment and equipment an organization decides upon—be it wired or wireless, “Cost and price are really secondary when it comes to VoIP,” says Liu. [P]

Smaller VoIP Equipment Manufacturers To Consider

Bandspeed
www.bandspeed.com
Bandspeed’s AirMaestro is a comprehensive, scalable Wi-Fi AP (access point) platform that allows SMEs to deploy and manage highly intelligent, automated, robust, and secure enterprise-class VoIP on Wi-Fi networks

EdgeWater Networks
www.edgewaternetworks.com
Offers an assortment of VoIP equipment, including the EdgeMarc Appliance for advanced routing of voice and video over

Zultys Technologies
www.zultys.com
A premier manufacturer of SIP-based VoIP systems, phones, and peripherals, including the MX30 and MX250, the first fully integrated IP PBX systems based upon open standards

IP networks, EdgeProtect System for securing VoIP networks, EdgeConnect PoE Switch, and the EdgeView VoIP Support System and Reports Server for ensuring quality of service on VoIP installations

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Buying A NAS Or SAN System

Continued from Page 1

Look for functional convergence. The lines between SAN and NAS hardware have blurred almost to the point of obscurity. Andrew Reichman, storage analyst at Forrester Research, sees the functional convergence between previously disparate SAN and NAS platforms as one of the major trends in the industry. Many new products—from high-end solutions, such as Compellent’s Storage Center, to entry-level systems based on Windows Storage Server, such as HP’s AiO (All-in-One) Storage Systems (www.hp.com)—build file-based NAS and block-level SAN capability into the same system. Yet Reichman adds that even businesses with existing infrastructure can easily integrate NAS functionality with SAN-based storage pools by adding a gateway appliance, such as the OnStor Bobcat Series (www.onstor.com) or similar products from NetApp (www.netapp.com) and others.

Don’t forget usability. Ease-of-use and ease-of-installation are watchwords, particularly for SMEs that usually don’t have a dedicated storage expert on staff. Appliances designed for the small business, such as NetApp’s StoreVault S500, HP’s AiO line, and Dell’s PowerVault (www.dell.com) systems make enterprise-level storage management features available to the nonexpert at prices that won’t break the

bank. According to Cheen Liao, president of Synology (www.synology.com), even relatively simple management automation can make a difference; particularly to the SOHO and SME users Synology targets. She notes that built-in features such as autonotification of a disk, fan, or backup failure; RAID degradation; or a volume reaching capacity limits can allow administrators to proactively fix storage servers before more serious problems arise.

Consider green storage technologies. While consolidation using virtualization has improved server utilization ratios and, consequently, energy efficiency, storage technologies have been slower to react to the increasing power demands of their systems. This is now changing under the banner of so-called green storage solutions. According to Greg Schulz of StorageIO, one easy method of improving efficiency is by merely using higher capacity drives. Adds Charles King of Pund-IT Research (www.pund-it.com), “One critical storage concern is disk drive performance, since drive capacity and performance choices have significant power consumption ramifications. Simply put, disk drive power requirements largely depend on spindle speed, making slower but more capacious drives more efficient in terms of watts per terabyte [W/TB] of storage power consumption.”

Schulz notes that going green doesn’t always mean sacrificing performance but can also be achieved by doing more with less—getting more work done within your existing power budget. He is seeing more industry emphasis on increasing throughput without upping power demands; with vendors now touting power efficiencies—so-called “green-washing” of their data sheets—by quoting metrics such as I/O operations per watt or throughput (megabytes per second) per watt.

Nexsan offers one particularly innovative technology, termed AutoMAID (Massive Array of Idle Disks), on its SATABeast and SATABoy appliances. This energy-saving feature automatically and transparently places the array’s disk drives in an idle—yet active—state when not in use, with tunable parameters allowing administrators to set desired access times and energy savings for individual drives.

Look for ways to improve storage utilization. One way to both improve energy efficiency and make better use of capital equipment dollars is by more fully utilizing existing storage capacity through such techniques as tiered storage and data reduction. Automatic data migration, or “tiering,” allows businesses to put frequently accessed data on high-performance devices, while data used less frequently is automatically moved to lower-cost storage systems. Reichman notes that some newer products, such as 3PAR’s InServ, Compellent’s Storage Center, and NetApp’s FAS Series,

actually incorporate this functionality within an array, so-called “in-the-box tiering,” to create “zones” of high-performance using different shelves within the same device.

Use data reduction technologies. Schulz notes that there are a variety of data reduction techniques ranging from single-instance storage (aka deduplication), which replaces redundant copies of the same data with pointers or links, to in-line compression and compaction, which automatically reduces the actual physical space consumed on storage devices for a given piece of data. While single-instance storage is still primarily used for archival devices such as VTLs (virtual tape libraries), not primary, online storage, several vendors, such as Data Domain (www.datadomain.com) and Storewiz (www.storewiz.com), offer real-time compression for network storage.

Consider a system’s scalability. Schulz advises businesses, particularly those with rapidly growing requirements, to look for scalable, modular architectures in a storage solution. Systems such as those from 3PAR, Compellent, Equal Logic, and LeftHand Networks allow the flexibility to significantly increase capacity without degrading overall system performance.

New Standards & Technologies To Watch

Reichman points out three relatively mature, but not yet pervasive, technology standards buyers should consider: iSCSI, SAS, and 10 Gigabit Ethernet. Reichman believes that most SMEs don’t need the added expense and complexity of FC (Fibre Channel) when building a SAN and that iSCSI is adequate for most applications. At the disk level, he sees SAS replacing FC as the internal interconnect in many high-performance arrays, noting that Seagate Technology (www.seagate.com) is aggressively pursuing SAS as a more cost-effective alternative to FC drives. Finally, Reichman notes that while Gigabit Ethernet offers adequate throughput for most SMEs, applications needing the highest-performance SAN or companies looking to future-proof their investments should ensure the iSCSI appliances they evaluate support 10GbE interfaces.

Buying Process Tips

Buying a new storage system doesn’t have to resemble traversing a minefield of competing product claims and buzzwords if you apply some rigor to the process. As Forrester’s Reichman summarizes, “Make a strategy of how much storage you’ll need over time, know your technical capabilities, make a sort list of technologies and vendors that meet the needs, and then get RFPs from each vendor with pricing details.” By following these steps and using some of the tips outlined above, IT organizations should be able to navigate the increasingly complex storage product landscape. P

Smaller Storage Manufacturers To Consider

Vendor/URL	Product
3PAR www.3par.com	InServ Storage Servers: A modular, scalable SAN platform with multiple Fibre Channel and iSCSI ports and offering both high performance and density
Area Data Systems www.areasys.com	Fibre Channel RAID Subsystems (DNS-3100, PSS-7121F, PSS-7161F, and PSS-8161F): 2U and 3U storage systems supporting 12 and 16 bays respectively using (depending on the model) SAS, SATA, or SCSI drives
Compellent www.compellent.com	Storage Center Hardware: Modular, standards-based platform designed for scalability and high availability Storage Center Software: A suite of applications offering automatic tiered storage, thin provisioning, snapshots, and remote replication
Equal Logic www.equallogic.com	Isilon IQ: Clustered storage systems
Isilon Systems www.isilon.com	iS325: A cost-effective iSCSI platform supporting up to 15 SATA drives, four or eight GbE ports, or one 10GbE interface
iStor Networks www.istor.com	PS Series: Modular, high-performance iSCSI arrays using scalable “peer” storage architecture to share resources and distribute load among arrays
LeftHand Networks www.lefthandnetworks.com	Open iSCSI SAN: Scalable iSCSI solution with storage clustering using industry-standard servers for HP, IBM, or LeftHand
Nexsan www.nexsan.com	SATABeast: Extremely high-density (42TB in a 4U chassis) SAN appliance supporting simultaneous use of Fibre Channel and iSCSI protocols; also includes ability to spin-down idle disks (AutoMAID) SATABoy: 3U Fibre Channel and iSCSI SAN device also offering energy-saving AutoMAID technology
Qlogic www.qlogic.com	Storage Controllers: Fibre Channel and iSCSI Host Bus Adapters and InfiniBand Host Channel Adapters for PCI Express and PCI-X platforms Intelligent Storage Routers: A low-cost iSCSI-to-Fibre Channel router enables iSCSI servers to access a Fibre Channel SAN

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Phishing Response Strategies

Continued from Page 1

logging in from places like home offices on a wireless LAN without a firewall. They may not have any antivirus or mail-filtering software installed. Users are the ‘soft underbelly’ of any network accessible from the public Internet.”

Getting users to hand over their own login information is less a technical challenge than a form of social engineering. Phishing is a method for convincing a user to divulge credentials to a hacker because the user thinks he is using his ID and password legitimately. Sometimes the term “email spoofing” is used for phishing attempts because the most common attacks have historically been email messages that ask users to log in to their accounts. But a growing number of phishing attempts have been conducted through instant messaging or automated telephone calls. In online cases, users receive a link in the false message that is ostensibly to the online presence of a business where they have an account. The sites may look like the real thing, but they are in place simply to record users’ login account and

password and use them later for illegitimate access.

Concerns For Corporate IT

Phishing has become a well-known security issue, with widespread publicity about the risks of identity theft and fraudulent attacks. News reports and other media reports usually emphasize the importance of individual consumers, rather than their corporate hosts, to be wary of phishing scams. After all, as one line of reasoning goes, if a user willingly, if carelessly, gives his login credentials to someone else, it has the same effect whether he responded to a phishing email or left his password on a Post-it note.

When social engineering leads to an administrator or other user losing his login credentials for an internal network or server, information security groups react strongly. Yet phishing emails and IMs are directed at remote workstations usually owned by users (and through applications they install and manage themselves), so does an SME have reason to take action against them?

Small to medium-sized enterprises can hardly afford to ignore phishing, even if it takes place outside their traditional security “core.” The hard costs of fraudulent account access are high and growing. In 2005, Gartner reported that losses from phishing scams totaled \$929 million in the United States. Estimates are hard to verify, but certainly the number of phishing attempts and identity theft reports have con-

Small to medium-sized enterprises can hardly afford to ignore phishing, even if it takes place outside their traditional security “core.”

tinued to rise. In most cases, retailers or financial institutions assume responsibility for the financial losses. Those losses, however, do not capture the full impact of phishing.

“Customers are losing faith in online transactions,” says Jamz Yaneza, senior threat analyst/researcher at Trend Micro (www.trendmicro.com). “Companies lose brand recognition once they are linked to phishing. Legitimate organizations that have an online presence have the most to lose from phishing, as it is usually their brand names and logos that are hijacked. This can lead to brand devaluation and possible loss of customer trust.”

One of the responses has been to treat email and IM scams in much the same way as viruses and other malware. As such, companies may encourage users to beware and take actions such as installing PC-based security tools, but no direct action. Yaneza feels organizations have no choice but to address phishing scams directly rather than leave them to customers. “No organization should ever leave customers to their fate for any reason, and viruses and other malware shouldn’t be one either,” he says.

Many security experts believe phishing is no longer a sport of amateur hackers who take over accounts or systems for the challenge or opportunity to show off. According to Yaneza, “Yesterday’s phishers have been replaced and are now run by organized criminal syndicates. Make no mistake, phishing is a crime, and as such, organizations should coordinate with law enforcement and their security solution vendors to ensure protection. Many enterprises have taken an active role to discovery of fraudulent activity and assist by providing as much information and background to the law.”

Taking The Battle To Phishers

Some organizational responses to phishing are relatively passive. These include enhancing login systems with multiple authentication protocols or dynamic login pages with graphics customized to different users. Communication is also key, either

for making consumers aware of these enhancements or to advise them of risks. Of course, organizations battle the added risks of negative publicity that can develop even from admitting they have been targeted by phishing scams.

There are also more aggressive means of battling against phishing.

Provide PC-based security software. Many PC-based security tools offer capa-

bilities for identifying fraudulent Web sites, such as the Microsoft Phishing Filter in Internet Explorer 7 (www.microsoft.com). Some enterprises have taken steps such as encouraging their customers to install such tools or even purchasing them.

Monitor linking to Web sites. False Web sites used in phishing scams often take images or whole pages from a retailer’s own Web site. Actively monitoring sites that link to your own can lead you to find phishing sites more quickly.

Engage in phishing site “takedown.” When a phishing site is discovered, putting it out of action means getting the owner, or the ISP hosting the site, to take it offline. This can range from a phone call to court orders and the involvement of law enforcement. Organizations that don’t want to do this themselves can engage the services of a growing number of security companies specializing in phishing takedown.

No End In Sight

Consumers may fear that financial institutions and other retailers may not continue to shoulder the burden of phishing’s costs forever. Businesses, fearing the loss of faith in online services, give no indication that they will stop paying when a phisher uses stolen passwords to steal thousands of dollars. Nonetheless, these costs are already being transferred to consumers through higher costs. Some hope to see governmental action to help end the phishing threat. Yaneza adds, “Since phishing is done online, many users could benefit if governments and the legal systems make it financially suicidal for some ISPs that harbor phishers and other criminal organizations in the pretext of simply running carrier services.”

Unless that hope of decreased phishing action—through governmental or other action—becomes reality, organizations that hope to do business online have to acknowledge the threat of phishing activity against their businesses. As the threat grows, many should become as active against this threat as against any potential attack against their internal network. ■

Selected Antiphishing Resources

Communication & Reporting Groups

Anti-Phishing Working Group

www.antiphishing.org

International association with corporate and law-enforcement members, focusing on education and information-sharing between members

FraudWatch International

www.fraudwatchinternational.com

Provides fraud alerts, monitoring, and detection services to consumers and corporate clients

National Cyber-Forensics & Training Alliance

www.ncfta.net

Collaborative organization intended as an alliance of subject-matter experts from industry, academia, and government

Takedown Vendors

Phishing takedown involves rendering a phishing site ineffective.

Internet Identity

www.internetidentity.com

Flexible in its takedown services, letting clients pay individually for each takedown rather than committing to a service agreement

NetCraft

news.netcraft.com

Offers a service to track occurrences of clients’ name, brands, trademarks, and slogans on the Web to help identify sites that may be trying to construct frauds or phishing attacks

RSA

www.rsa.com

FraudAction service monitors proactively for phishing sites and emphasizes its investigative forensics for post-attack remediation

VeriSign

www.verisign.com

Well-known for certificate and authentication services but also offers phishing response protection as part of its Managed Security Services

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VIRTUAL MACHINES, like hardware systems, need systems management. As the use of virtualization proliferates, IT admins are searching for effective ways to add management capabilities for these virtual systems.

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According to Marty Kacin, president and CTO of KACE, the KBOX 1000 performs IT endpoint network node life cycle maintenance tasks, including inventory, assessment, audit, compliance management, and reporting, and the KBOX 2000 supports centralized provisioning and remote system recovery tasks, including bare-metal installation, booting on PXE (Preboot Execution Environment), native OS installation, or a

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KACE also announced vState Management, a new KBOX feature responding to requests to be able to manage both virtual and physical environments simultaneously.

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Buying Wireless Equipment

A Guide To Purchasing The Latest Technology For Boosting Your SME’s Wireless Strategy

by Elizabeth Millard

SOMETIMES, THERE CAN be too much of a good thing. As many data center and IT managers have found, technology advancements have brought a wealth of products flooding into the marketplace, which is advantageous for pricing but tricky when it comes to selecting two or three vendors. For buying the best in wireless, here are a few tips to guide the way.

Have A Goal

Companies should think about what their aims are for wireless on their networks, notes Mike Hronek, networking specialist at CDW (www.cdw.com). Whether it’s

going to be used mainly in conference rooms, be available just for guests, or include wireless IP telephony will dictate which type of products will be considered. “Having a goal will make sure someone doesn’t end up with more or less than they need.”

Keeping that goal in mind is also important when comparing products. Some products may have features that a company may not use, Hronek says. Meanwhile, some other products won’t fulfill all of the needs of a company. “Additionally, you should look at products that are made for use in a business environment,” he says. “Many of the consumer-based products are great for the home but may not provide all the features and security a business needs.”

Buy More Access Points

Companies should consider installing more access points, or APs, and dialing down their signal strength as opposed to getting fewer units and setting them at full blast, says Hronek.

One of the benefits of this approach is being able to control where your signal goes with greater accuracy. An access point set at maximum may send the signal into another office in a shared building, for example, which could present a security risk if proper controls aren’t put in place, but more likely will annoy a company’s neighbors because the signal could compete with their equipment. But at a lower strength, the signal broadcast can be better directed.

“In addition, when an access point is set at full strength, you’re opening it up for more users to access it,” Hronek says. “Wireless is a shared medium, so the more users that access one AP, the slower their experience will be.”

Cover The Whole Office

When looking at equipment, consider the long-term goal of covering the entire office, or at least having a timeline for rolling out wireless to everyone. Simply limiting it to a conference room or two might be fine at first, but once there’s wireless in one area, it tends to cause a spike in demand, Hronek notes.

“If someone puts wireless in one area of an office but not in another area, it may only be a matter of time before one of the

standards-based products allows for interoperability and better overall performance,” he says. “Further, protocol enhancements and upgrades are easier.”

The biggest new technology coming in wireless is 802.11n, many experts have noted. The standard isn’t set to be ratified for another year, but companies may want to include the standard in their long-term plans, especially if it lives up to its promises of faster speeds, greater range, and backward compatibility with current wireless standards.

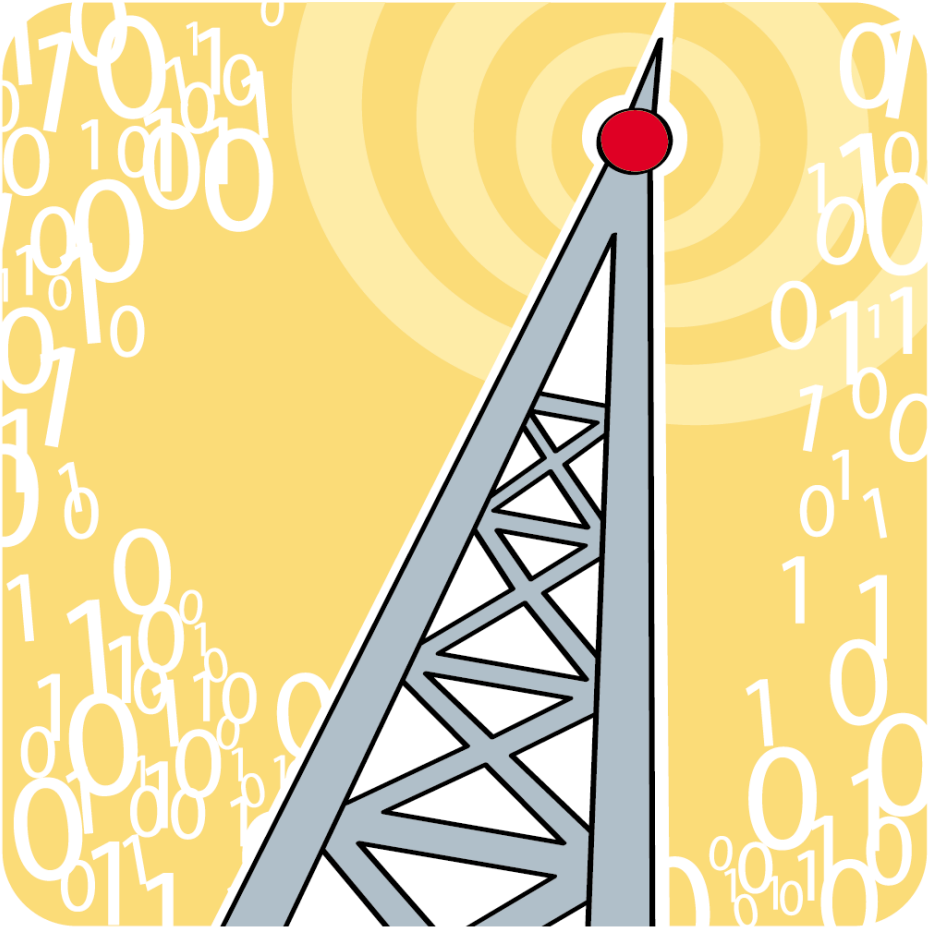
But, Hronek adds, buyers should beware when trying to rush the standard. Because it hasn’t been ratified as a standard yet, anyone deploying equipment that’s been touted as “pre-N” should understand that the existing products may not match the final standard. Also, due to the higher speeds that are being promised, the wired part of the network will need to be set up to handle those speeds. Normally, that is going to mean more gigabit than most companies currently have deployed, Hronek says. And finally, if a company is running PoE to an 802.11n device, there’s a chance that device may draw more power than current PoE switches can provide.

Think About Management

If multiple access points are being considered, centralized management using thin access points and controller-based architectures is recommended, Sinha adds, “WLAN controllers reduce configuration and management headaches.”

Controller-based setups allow companies to have more management over their wireless from a central point. It also allows for lower deployment and operational costs and tends to make planning easier.

Also, Sinha advises that companies consider wireless intrusion detection and 24x7 monitoring tools that secure the WLAN from attacks and rogue wireless devices, as well as provide troubleshooting capabilities.



users in the ‘wireless desert’ takes matters into their own hands and puts their own AP on the network,” he says. “This would be a huge security risk, as this AP is probably not going to conform to your network security standards. If everyone has access to wireless, there is no reason for anyone to give themselves wireless.”

Buy Standards-Based Products

For WLAN, employing standards-based technology means looking for those that are Wi-Fi-certified, notes Amit Sinha, CTO of AirDefense (www.airdefense.net). “Buying

Controller-based setups allow companies to have more management over their wireless from a central point.

Smaller Manufacturers To Consider

AirMagnet
www.airmagnet.com
Has a number of wireless-specific products, including AirMagnet Enterprise, a continuous WLAN security and performance monitoring system, and AirMagnet StreetWISE, a family of endpoint security software products that protect laptops from dangerous wireless activity and questionable end-user behavior

EasySync
www.easysync-ltd.com
Specializes in PC, Mac, and Linux cards and peripherals; new products include the ES-W-3001-M: WLAN Serial Server, a high-performance server powered by a 32-bit CPU core, with other models in the line due to roll out soon

i-Tech Company
www.i-techcompany.com
Provider of rackmount products, including relay racks, LCD monitors, KVM switches, and UPS systems, as well as a number of wireless-specific products; some in the line include the Aten KVM Wireless IP and the Avocent LongView Wireless KVM

Meru Networks
www.merunetworks.com
Develops wireless infrastructure systems that enable an all-wireless enterprise; its Air Traffic Control technology brings the benefits of cellular to a WLAN environment, and its WLAN system delivers converged voice and data services over a single WLAN infrastructure

SECURITY

OCTOBER 12, 2007

AdventNet ServiceDesk Plus Improves Efficiency

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SME HELP DESKS FACE many challenges, and the better management tools they put into place, the more time they can spend with internal customers vs. dealing with admin and overhead tasks. Such tools also offer a great paper trail for when the boss is at your door asking for service metrics.

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self-service Web portal, and knowledge-base. It comes in Standard, Professional, and Enterprise Editions to suit SMEs planning for future growth.

Putting these tools on an intranet provides SMEs a consistent interface to a number of sundry administrative tasks that take IT and help desk staff away from contributing to the business. Implementing an online knowledgebase is also valuable for enabling users to search for their own solutions first instead of pestering the IT staff.

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A Buying Guide For Cooling Equipment

Trends In Data Center Cooling Reveal Innovative Products

by John Brandon

THE DATA CENTER IS GETTING COOLER and more efficient—thanks in part to new efforts in green computing across all technology sectors, products that focus cooling on power-hungry equipment, and new liquid-cooling techniques that are more effective than more common air-cooling techniques—relying on a basic physics principle. But weeding out the technology roadmap, cooling advice, and data center trends from the actual products you can buy is sometimes a difficult task, so these tips are focused squarely on the products available.

Liquid Cooling Hits The Mainstream

IBM (www.ibm.com) introduced the Rear Door Heat eXchanger last year as part of its Cool Blue technology that uses liquid cooling. With a new emphasis on green computing, water-cooled servers have become increasingly popular due to a simple law of physics—that water has 3,500 times the capacity of air in the removal of heat. “Liquid cooling uses refrigerants as a passive element in the removal of heat,” says Kwasi Asare, an IBM Cool Blue product marketing manager. “The technology works the same way as an ice cube where the energy is stored and can dissipate air into the data center at a lower energy cost and at different, more controlled times of the day. This can increase efficiency by 40 to 50% and lower energy costs significantly.”

Asare explains that about 55% of the power coming into a data center is normally dedicated to cooling and not computational power. However, liquid cooling can be combined with other techniques for dramatic cooling benefits. These

additional techniques include virtualization and consolidation where servers share the computation load, the Blade-Center architecture, using monitoring and power control software such as IBM Power-Executive, and reducing the number of network switches used in the data center.

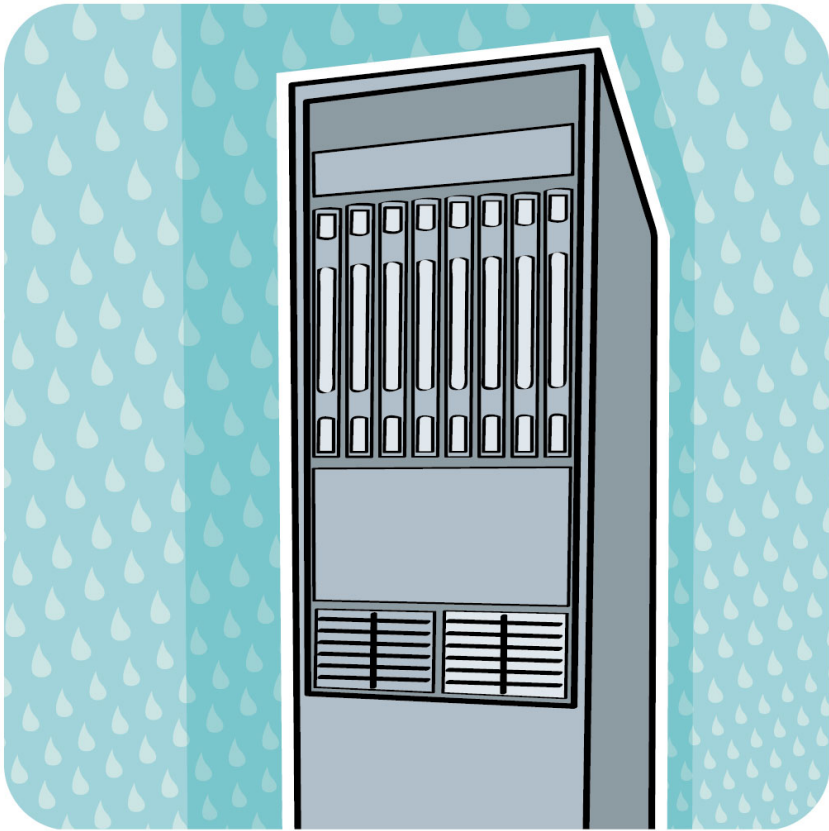
Directional Cooling For Servers, Racks

In November of last year, HP (www.hp.com) introduced new directional cooling products, which gave data center admins another option for battling power and cooling needs. The Dynamic Smart Cooling system can reduce cooling costs by 25 to 40%, according to HP. The management system helps consolidate and retune air-conditioning units and other equipment in the data center.

“Directional cooling and cooling at the rack level are both new advancements and are focused on placing cooling closer to the source that requires it so that cooling energy is better optimized, not wasted. Data centers are like houses; each one is different and unique, dependent upon not only the actual use (kilowatt/rack) that is planned but also the customer’s knowledge and sensitivity to actual data center best practices and corresponding efficiencies,” says Ron Mann, the director

of engineering for infrastructure solutions at HP.

Mann also mentions the HP Modular Cooling System, which brings data center air control closer to the servers by integrating the system into the rack itself. Using the cooling technology in the rack, admins



can deploy up to 30kW in power on a single rack.

Use A Backup Cooling System As A Stop-Gap Measure

For smaller companies that don’t have the large footprint cooling concerns of a larger enterprise, a backup cooling system can help reduce cooling costs. For example, Atlas Sales and Rentals’ MovinCool Office Pro 12 is a small, portable unit that can start working in the event that the room temperature exceeds a certain level or another system fails in the room and temperatures start rising.

“For an inexpensive backup cooling system, put a portable unit in the corner with the fan option switch set to Off,” says Clark Michel, the vice president of Atlas Sales and Rentals, a company that specializes in data center cooling. “Set the thermostat a few degrees above the room temperature, and the cooling unit will sit dormant until the room temp rises. It will automatically

‘wake up’ when needed, and you won’t have a crisis when your primary cooling system fails.”

Install A Ceiling-Mounted Portable Cooling Unit

Eddie Stevenson from MovinCool suggests a ceiling-mounted packaged air-conditioning unit for data centers that are cramped for space and cannot use a portable roll-in spot-cooling air-conditioning unit. MovinCool’s CM12 provides 10,500 BTU per hour of cooling and can be mounted easily using nonproprietary hardware just above server racks. The unit works with standard mounting hardware and thermostats available through office building suppliers, so it does not use proprietary hardware for installation—a typical “gotcha” for installing some AC units.

Make The Move Now To R410

One industry trend that is broader than IT and the data center, but has a major effect in data center planning, is the move to R410 refrigerants in cooling products. According to Garth Tagge, the national sales manager for Spot Coolers, smaller companies with data centers should start planning for R410 products as they plan their cooling requirements. He explains that R410 will have new pricing tables, which will be important for data center managers to know (prices are approximate): \$3,700 for 1-ton units, \$4,700 for 2-ton units, \$6,500 for 3-ton units, or \$10,500 for 5-ton units.

An example of a product that uses the new R410 refrigerant available through Spot Coolers is the MovinCool Office Pro 12, which helps admins stay current with the move to more energy-efficient air conditioning.

Look For Ancillary Technology Advances To Aid In Cooling

IBM’s Asare says that evaluating new advancements in ancillary products—including new servers, monitoring software, virtualization, and even storage and networking—can and should become part of the data center cooling planning process. For example, new solid-state drives in BladeCenter systems can increase the efficiency of servers up to 90% over magnetic media drives, and new power supplies that are now 99% efficient can also have a dramatic effect on the cooling levels in a data center over less energy-efficient legacy server power supplies. P

Small Manufacturers To Consider

Company	URL	Product
Atlas Sales & Rental	www.atlassales.com	Porta Cool Evaporative Unit
MovinCool	www.movincool.com	Office Pro 12
Spot Coolers	www.spot-coolers.com	CoolCube

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- 2x10/100/1000 LAN onboard.

2U Server - ASA2121I

- 3TB Storage Installed. Max-12TB.
- Dual-Core Intel(r) Xeon(r) Processor 5030,
- 1GB 667MHz FBDIMMs Installed.
- Supports 16GB FBDIMM.
- 12x250GB hotswap SATA-II Drives Installed
- 12 Port SATA-II RAID Controller.
- 2x10/100/1000 LAN onboard / 500W Red PS.



3U Server - ASA3161I

- 4TB Storage Installed. Max-16TB.
- Dual-Core Intel(r) Xeon(r) Processor 5030,
- 1GB 667MHz FBDIMMs Installed.
- Supports 16GB FBDIMM.
- 16 Port SATA-II RAID Controller.
- 16x250GB hotswap SATA-II Drives Installed.
- 2x10/100/1000 LAN onboard./ 800W Red PS.



5U Server - ASA5241I

- 6TB Storage Installed. Max-24TB.
- Dual-Core Intel(r) Xeon(r) Processor 5030,
- 1GB 667MHz FBDIMMs Installed.
- Supports 16GB FBDIMM.
- 24x250GB hotswap SATA-II Drives Installed.
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- 2x10/100/1000 LAN onboard / 930W Red PS.



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- 1x16 Port SATA-II Multilane RAID Controller.
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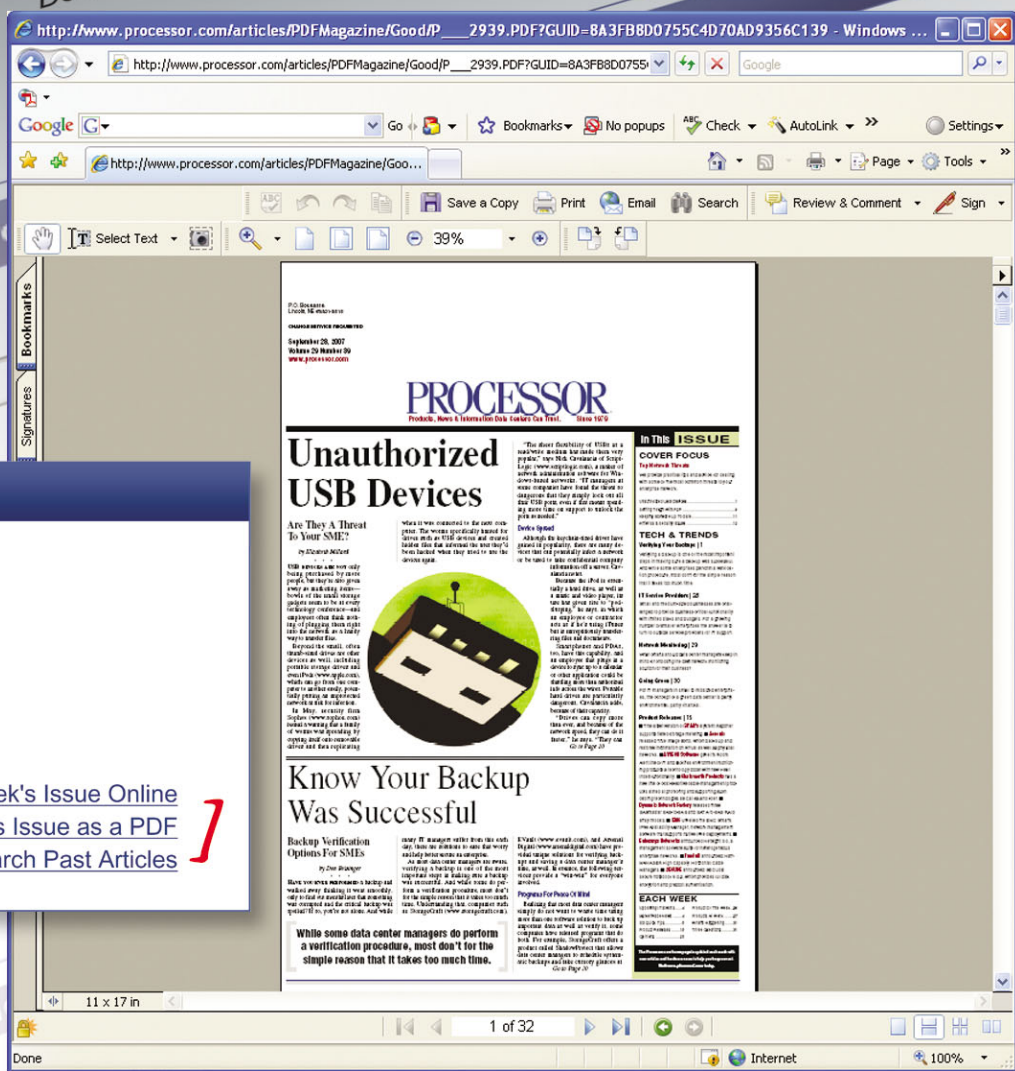
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Product  Releases

CLIENTS

■ BenQ is targeting its MP771 XGA projector at meeting rooms, classrooms, and living rooms. The 3,000-ANSI lumens projector features a 2,000:1 contrast ratio and includes UNISHAPE lamp lighting technology. It also features 3D color management, supporting independent R/G/B/C/M/Y color fine tuning. Customers can use the MP771 on white or nonwhite walls, thanks to the projector's built-in Wall Color Correction technology. The MP771 short-throw projector also features BrilliantColor technology and can project a 74-inch image from a 1-meter distance. The projector has a detachable keypad, an Off-And-Go feature, a presentation timer, and Power On/Off ringtones. BenQ plans to make the MP771 available next month.

■ Novell launched the latest version of its Open Enterprise Server platform. Novell Open Enterprise Server 2 supports 64-bit software services and NetWare virtualization. Another notable feature is the Dynamic Storage Technology, which lets customers define data policies to automate certain types of data to a given storage device for easy access and secure archiving. Customers interested in using Open Enterprise Server 2 can purchase it immediately as a standalone offering or next month as a package with Novell Open Workgroup Suite.

■ VeriFone announced the Vx 670 Bluetooth, a version of its handheld designed for short-distance environments. The Vx 670, in GPRS (General Packet Radio Service), Wi-Fi, and now Bluetooth configurations, is a small, all-in-one wireless handheld payment device with a hidden integrated printer. The Vx 670 has a large, high-resolution, white backlit display and large, blue backlit keys in a tapered design. A rugged, drop-resistant, spill-resistant case holds up to the most demanding conditions. For security purposes, the communications station is discoverable for a brief period after power-on to establish a secure link with the handheld devices, which are not discoverable by other Bluetooth devices. No transaction data is stored in the system, and customer PINs are never transmitted without additional encryption. Vx 670 Bluetooth is expected to be available late this month.

NETWORKING & VPN

■ Citrix has released the Citrix Provisioning Server solution, which allows IT organizations to stream data center and desktop operating systems and workloads to both virtual and physical machines from a central location. Citrix Provisioning Server solution makes it possible to stream a server operating system and workload from network storage to bare-metal or virtual servers in the data center. It also allows desktop operating systems and workloads to be streamed to virtual desktops and LAN-connected diskless PCs on demand, which reduces the need for backup servers and cuts energy costs.

■ Infoblox announced the Infoblox IPAM WinConnect system, an IP address management appliance with integrated software support for Microsoft DNS and DHCP services. The Infoblox IPAM WinConnect system is designed to help IT administrators replace spreadsheets, manual processes, and home-grown solutions with a single appliance. The IPAM WinConnect system automates the processes related to administering IP addresses, and IT administrators can manage DNS, DHCP, and IPAM from a centralized console through a GUI that offers a graphical and hierarchical representation of the IP map. IPAM WinConnect also includes detailed audit logs to provide administrative audit trails for regulatory compliance. Additionally, IPAM WinConnect offers automated backup and restore capabilities to enable high uptime and eliminate data loss.

■ KACE has announced the KBOX Systems Management 1200 Series and KBOX Systems Deployment Appliances 2200 Series. These products provide security, management tools, and scalability and include tools specially tailored for midsized companies. KACE will also provide patching and remediation functions through a partnership with PatchLink. The 1200 Series provides policy-based Help Desk functionality along with queues, ticket workflow rules, and email-based ticket management. It also offers role-based permissions and change auditing. The 2200 Series provides vState Management, image-editing features, and iSCSI support.

MESSAGING & TELEPHONY

■ Agito Networks released its RoamAnywhere Mobility Router, which uses RF-based, location-aware technologies to better wield voice and data applications on the go while remaining free to whichever mobile carrier and equipment vendor the customer chooses to use. Agito's patent-pending RF location-aware algorithms allow in-building calls to stay on Wi-Fi, saving cellular costs and eliminating dropped or poor-quality calls. The RoamAnywhere Mobility Router also gives customers the ability to automatically switch profiles on their mobile phone whether at the home or the office. Agito's RoamAnywhere Mobility Router will be available later this quarter.

■ Open Text, in collaboration with FaceTime Communications, has introduced real-time communications controls into its Livelink ECM (enterprise content management) software to improve the security and records management of corporate networks. The joint offering also lets customers comply with eDiscovery and records retention requirements to retain, archive, and destroy IM conversations, corporate intranet-based email, Internet email, Skype, and social networking communications. Supported platforms include Microsoft Live Com-

Product Releases

■ **SMC Networks** announced the SMC-EZ SMC GS8P-Smart Gigabit PoE (Power over Ethernet) Switch, a 1U, 8-port, Smart Managed 10/100/1000 switch. PoE support enables the switch to provide power through CAT 5 cable connections, so you don't need to place network devices near a power outlet or run separate power lines to them. The SMC GS8P-Smart also features GS8P-Smart by QoS for voice and data integrity and VLANs to provide security at the edge of the network. Additionally, the switch provides a Web-based management user interface, making 9k Jumbo Frame Support, Trunking, and PoE configuration easier to set up and monitor.

PHYSICAL INFRASTRUCTURE

■ **CXtech** has introduced CABLExpress fiber enclosures that provide high-density connections in the smallest space possible, saving time and money. CABLExpress includes branded fiber enclosures and modules and branded MTP fiber trunks, connectors, and harnesses. The fiber enclosures come in sizes ranging from 1U to 9U and will mount in any 19-, 23-, or 24-inch rack or cabinet. The fiber enclosures are kept in durable metal bodies, adding protection for cables, while the connectors feature ultra-strain relief through high-performance zirconium ceramic inserts. Additionally, the trunking assemblies are made to be 60% smaller in cross-sectional area and a fifth of the weight of distribution/MIC trunking.

■ New from **Para** is the Minuteman EnterprisePlus Series of UPSes. Five 120VAC and two 208VAC models are available to cover the needs of SMEs, VoIP, enterprise network equipment and servers, and phone switches. The 2U series features load shedding, RoHS-compliant design, a 0.8 or greater power factor, and independent battery recharging and bypass.

■ The T1700 KVM Drawer from **Raritan** has a 17-inch, 1,280 x 1,024 LCD; mouse touchpad; and keyboard in a 1U rackmount design. The drawer's LCD also consumes less energy than models with CRT displays. The T1700 is available for \$1,499.

SECURITY

■ **American Portwell Technology** is targeting its NAR-5520 network security appliance at customers who are looking for performance in a 1U rackmount unit for such network security applications as Triple Play broadcasting, antivirus, UTM (unified threat management), firewall, WAN optimization, and media gateways. American Portwell NAR-5520 includes the Intel 945G chipset and supports socket LGA775 processors, including Intel Core 2 Duo. It offers up to six PCI-E x1 slots, as well as four PC GbE ports. The system supports dual-channel, 800/667/533 DDR2 unbuffered memory and has built-in bypass segments that support fail-over/bypass functionality.

■ **Arbor Tech** released the MBX series network security appliances, targeted at customers who need to provide IDS/IPS, antivirus, firewall, UTM, and content filtering applications for enterprises. The MBX-1736 supports up to 4GB of dual-channel DDR2 memory and Intel Core 2 Duo processors up to 2.13GHz. It offers Intel I/OAT (I/O Acceleration Technology) and a Bypass LAN feature. The device sports six Gigabit LAN ports, two of which have Bypass functionality, which protects network uptime during device failure. The 1U rackmount device also has a 32-bit PCI slot and a mini PCI slot, as well as a CompactFlash II slot and room for 3.5-inch hard drive storage.

■ **Reconnex** announced version 7.0 of its Reconnex iGuard DLP appliance, which includes a patent-pending Content Analytics Engine that aggregates, synthesizes, and analyzes large amounts of data in the iGuard Capture database to determine who should have access to data. Reconnex 7.0's features include applications that automatically identify the information that needs protecting to simplify and reduce data protection processes; advanced filtering and grouping abilities to automatically identify valid and invalid data recipients; rule-tuning workflows; and investigative tools to support e-discovery.

■ **Reflex Security** announced the Reflex MG line of network security switches, designed to offer 1GbE/10GbE network security and switching at the core, distribution, and access layers. The Reflex MG line of network security switches delivers multi-vector security (deep packet inspection, IDS/IPS, network access control, L2/L3 firewall, and malware protection), as well as networking functionality (VLAN support, link bonding, and QoS) on a 10Gbps platform. The Reflex MG also offers an integrated security manager console with advanced network discovery, reporting, and remediation tools. The Reflex MG line is interoperable with existing network infrastructure and utilizes standards-based architecture and protocols with flexible deployment options.

SERVERS

■ **Fujitsu and Sun Microsystems** have expanded the Fujitsu and Sun SPARC Enterprise service line via the release of the SPARC Enterprise T5210 and T5220 servers, which the companies say are the first to use the new UltraSPARC T2 processor. The servers run on the Solaris OS and include integrated virtualization abilities that let IT staff maximize system utilization to lower the cost of delivery of new IT services. The servers let users turn off bad threads, detect multiple memory errors, and reallocate bad memory blocks. Additionally, Integrated Lights Out Management tools have been implemented to integrate and manage the servers within Enterprise Management Frameworks and Element Managers, which the companies say will give the servers increased agility while reducing management overhead for maintenance and patching.

■ **Verari Systems** announced the availability of the VB1160D, a blade-based server. Equipped with Intel's Quad-Core Xeon 3200 series processors, DDR 2-800 memory, and the X38 chipset combined with PCI-E x16 slots, the server is designed to be high-powered yet energy-efficient with the highest possible density. The device has up to 16GB of memory and a storage capacity of up to 2TB while capable of supporting as many as 132 server nodes, which pushes the storage up to 100TB.

STORAGE

■ **Arkeia Software** announced the release of its EdgeFort 300 series, an all-in-one, appliance-based, federated data protection product. The product offers reliable, affordable data protection for large organizations with remote offices. The series is integrated with Arkeia's network backup software and hardware systems, including disk and integrated tape drives. New architecture provides remote and centralized data protection so remote and branch offices can back up, restore, and archive critical data without local IT resources needed. In addition to Central Management Server, the series includes 100, 200, 300, and 500 series models.

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Product Releases

Continued from Page 17

■ **Autonomy ZANTAZ** announced version 6 of its Proactive Information Risk Management solution, designed to restore media and consolidate archives, as well as review and produce real-time policy management and analytics. These features are placed onto a single platform called Autonomy's IDOL (Intelligent Data Operating Layer). IDOL allows enterprise data to be available across several systems and archives, allowing IDOL to understand and process all sources of information, including email, instant messages, files, applications, voice, and video.

■ **CipherMax** announced its CM140T integrated storage encryption solution to manage legacy and encrypting tape devices seamlessly through a common key management system. The CM140T centrally manages encryption keys for legacy and LTO-4 tape libraries in combination with VTLs through a single interface called single-pane-of-glass. CM140T also includes automatic tape format detection and automatic scratch tape detection to identify blank, plain-text, and encrypted tapes and provide them with the most up-to-date encryption key; support for legacy tapes in LTO-4 drives; tape media label tracking to keep encryption keys updated through a global database; and plain-text tape volume header support to allow backup applications to be able to recognize old tapes. CipherMax CM140T secures information on tape media at 256-bit AES encryption and data compression in a 1U form. It supports up to 16 Fibre Channel ports or 32 clustered ports.

■ **COPAN Systems** has unveiled the Revolution 300 series, a MAID (Massive

Array of Idle Disks)-based product line that combines the power of data deduplication with the advantages of the MAID platform. The Revolution 300 series is a dense, cost-effective solution, providing the scalability and flexibility that organizations need when dealing with massive volumes of data. Users can reduce power and cooling costs by 75% because the enhanced MAID platform only powers up drives when requested by the application, and it ensures no more than 25% of the drives are on simultaneously. This reduces the environmental footprint and prolongs the life of the disks.

■ **EMC** has introduced new data deduplication and CDP (continuous data protection) technologies that are able to be integrated into the backup and recovery program, EMC NetWorker. These new features give users more flexibility, management, and control over costs in regard to their data protection operations. With data protection from EMC RecoverPoint and data deduplication from EMC Avamar, the core infrastructure of the EMC NetWorker is stronger and more advanced. It stores just one copy of subfile data across sites and servers, reducing the amount of data that is backed up daily. Additionally, the amount of file system data to back up is reduced through the combination of the programs, without adding layers of administration.

■ **Enhance Technology** released the EnhanceRAID T4H CR, a four-disk, FireWire800-based portable RAID desktop storage device with quad-interface (FW800/FW400/USB2.0/eSATA) connectivity and user-selectable data protection. For carrying convenience, the storage device comes with an H-shaped handle, and it includes

removable disk trays, individual disk key locks, a front secured door, a hot-swappable cooling fan, and user-selectable RAID settings.

■ **Iron Mountain** has announced that its Connected Backup for Server product is now available. The product extends Iron Mountain Digital's data protection and recovery products with enterprise file and print server protection, while also complementing the company's Connected Backup for PC and LiveVault server backup products. Connected Backup supports Windows Server OSes for recovery and backup, while also giving users storage savings and reductions in backup time. Patented data reduction and deduplication technologies also reduce storage capacity requirements by more than 80% of data volume. Available features include SendOnce, which creates a pool of shared files; Delta Block, which backs up only incremental changes at the block level; and Data Compression, which minimizes storage footprints.

■ **iStor Networks** has introduced the integraStor family of iSCSI storage arrays. The integraStor products work well in applications in which a company has both primary and tiered storage. The integraStor family of storage products is available in single boxes, as well as in multichassis configurations with up to 100TB of storage in the array. Features of the integraStor products include snapshot, CDP, and HA technologies. The first model in the integraStor line is the iS5-Series, which is a scalable RAID product that includes eight GbE iSCSI ports, two MiniSAS expansion ports, and as many as 4GB of data cache per controller. It also has SAS and SATA

support and HA-ready technology with the 10 million-gate System-on-a-Chip virtualization stack.

■ **Mendocino Software** has announced InfiniView 2.1 for Microsoft Exchange Server, which provides faster recovery servers than many traditional data-protection services and products. The product was also designed to interfere with an Exchange Server's operation as little as possible during backup procedures. InfiniView now includes support for Microsoft Exchange servers, which includes support for VSS, MSCS, and Windows 64 on x64 Intel and AMD platforms. InfiniView for Exchange lets companies recover email messages, calendar and task events, entire mailboxes, public and private folders, and Exchange databases. Mendocini Software InfiniView 2.1 for Exchange prices start at \$34,000.

■ **Nirvanix** has launched its Storage Delivery Service, which is designed and optimized for use in media applications. The product now includes the beta version of several new functions, including Media Transcoding (with two new Web service API methods), Image Manipulation (with new support for rotating and flipping images), File Search (with three new API calls which let programmers search by file system, metadata, or tag data), Sideload (for uploading from a hosted URL), and Ruby Gem (with an nvx-sds gem library for Ruby). Nirvanix's service is available for 18 cents per gigabyte per month of storage and 18 cents per gigabyte transferred. Enhanced-level customer support is available for \$160 per month, and premium-level customer support is available for \$600 per month.



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Product Releases

■ **ProStor** says that its new InfiniVault archive appliance offers secure, speedy, and reliable offsite archival storage with a 30-year lifespan. The InfiniVault uses RDX removable disk media for unlimited, portable capacity. Its Archive Compliance Engine offers an audit trail for regulatory compliance, buttressed by technologies such as WORM, file shredding, encryption, and others. Pricing begins at \$10,995.

■ The scalable **Quantum** Encryption Key Manager uses industry-standard algorithms to manage the encryption keys used in the Scalar’s LTO-4 tape drives to encode data via hardware. Q-EKM is a Java program that generates 256-bit AES encryption keys “out of band,” or out of the data path. The operation has no performance impact or application incompatibilities.

■ **SoftLayer** released StorageLayer, a storage and data backup service that offers a variety of storage technologies, including FTP, NAS, and iSCSI, all designed to work together to offer a more comprehensive solution to customers’ needs. StorageLayer gives access to SAN storage over Ethernet and features Gigabit functionality between devices, 10-gigabit uplinks, and security through a customer’s VLAN.

■ **Transcend** announced its 32GB, 2.5-inch SATA SSD. Features include a tough metal outer case, instant access speeds, large capacity, high reliability, low power consumption, and antishock capabilities. The 2.5-inch SATA SSD has built-in ECC (Error Correction Code) functionality that ensures highly reliable data transfer and increases your system’s overall integrity. With no moving parts, no noise is generat-

ed from the SSD, and less power is needed for operation in comparison to traditional hard drives. The 2.5-inch SATA SSD is currently available in 8GB, 16GB, and 32GB capacities.

Transcend also announced its 160GB StoreJet 2.5-inch SATA external hard drive. The StoreJet 2.5 uses a polished aluminum case that houses a 2.5-inch SATA hard drive. The StoreJet 2.5 uses a high-speed USB 2.0 interface, which provides data transfer rates up to 480Mbps while maintaining full compatibility with USB 1.1. Inside, the StoreJet’s 160GB hard drive supports transfer rates up to 1.5Gbps. The StoreJet 2.5 SATA hard drive features a OneTouch Auto-Backup button and comes with Transcend’s StoreJet elite 2.0 software, which offers backup scheduling, security, and power-saving functions. The StoreJet 2.5 SATA is available in three models and colors: Silver (80GB), Titanium (120GB), and Blue (160GB). Additionally, the StoreJet 2.5 SATA is available as an external enclosure without a hard drive. The enclosure is compatible with all brands of 2.5-inch SATA hard drives.

■ **Xiotech** released its SAN storage system for virtual and consolidated environments, the Magnitude 3D 4000. Features include Intelligent Provisioning, which is designed to automatically adjust volumes to avoid oversubscription, and ICON Manager, which allows the user to manage storage as a Windows volume that can be accessed via an icon. The Magnitude comes in three variations, the 4000s, 4000e, and 4000e Edge; the largest of the three offers 168TB of capacity, 248 server connections, and 2GB of memory.



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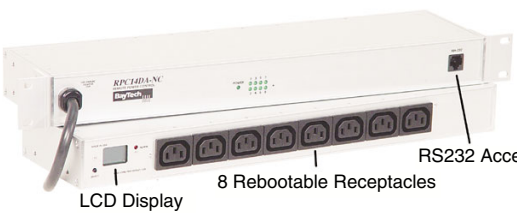
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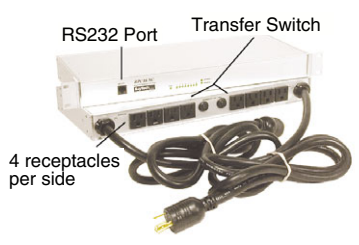
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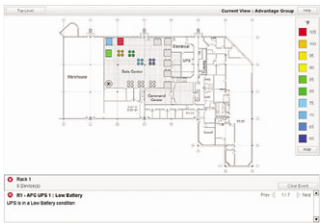
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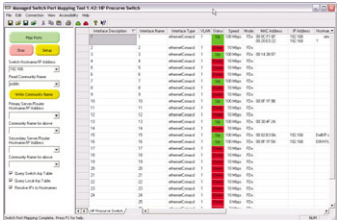
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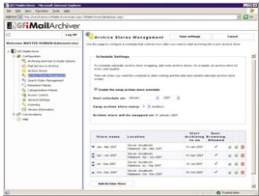
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New ENERGY STAR Specification Adopts 80 PLUS

The EPA (US Environment Protection Agency) has drafted updated requirements for computers that include 80 PLUS efficiency levels in the international recognized ENERGY STAR program. The new requirements are expected to take effect in late 2007. Consumers will soon associate ENERGY STAR and 80 PLUS as basic requirements for an energy efficient, cool, and quiet computer.



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Monitor Your Data Center For Heat, Humidity & Water

Sensatronics Senturion Helps Protect Your Critical Infrastructure

WITH THE RELIANCE on network applications and IT hardware in today’s business environment, data center managers and IT personnel in general are becoming increasingly aware of how important it is to protect the infrastructure that serves as the lifeblood of their organizations.

Using an environmental monitoring solution from a company such as Sensatronics is paramount in protecting your company from a potentially damaging event caused by excessive heat, humidity, water intrusion, or other physical threat.

Newest Tool

Senturion is the newest addition to the Sensatronics family of environmental monitoring solutions. Sensatronics designed the Senturion unit from the ground up to handle all of the monitoring and alerting needed for a data center of any size without the need for additional software.

Most importantly, the Senturion is designed with the IT manager in mind. The Senturion includes only the features you need, making it one of the most affordable options available.

Senturion is a turnkey rack-mountable environmental monitor equipped with integrated temperature/humidity and light level sensors. It’s designed to fit a standard 1U rack and has a slightly protruding front

panel for easy access to probe attachments and controls.

The Senturion’s small depth (about 4 inches) and light weight (about 2.75 pounds) make installation simple: Just install it in a rack, update a few settings,



and you’re up and running. The small depth also means the back of the rack in the same 1U space can be used for other equipment, reducing rack space requirements

Monitor, Record & Alert

An integrated sensor wing monitors the environmental conditions of your equipment, and, if your data center requires additional probes, the Senturion is capable. With RJ12 connections for external probes, the Senturion can accommodate up to eight additional probes for placement throughout the room or facility, up to 1,000 feet away.

Senturion’s built-in cable management is designed to make running external probes a cinch; the guides provide order to the cables while creating a clean high-tech look for your equipment.

The Senturion’s internal Web server monitors, records, and alerts users to potential threats to IT assets, and the integrated front panel 1.9-inch color LCD lets users check the status of probes without logging into the Web interface.

The front panel contains a visual status indicator, providing users a fast and local method of checking the alarm state of any probes. The unit’s front panel lighting will be either blue for normal or flashing red when there is an issue. In addition, should a probe trigger an alarm, there is a local auditory alert incorporated into the front panel that sounds until corrective action has been taken.

- Senturion features:**
- Designed with the IT manager in mind
 - Small size designed for easy installation
 - Configurable via the Web interface
 - Security via username/password basic authentication
 - Upgrade over the Internet via the push of a button in the Web interface

- Direct access to customer support via the support tab of the Web interface
- Internal temperature/humidity/light sensors
- Specially designed packaging ensures that the unit arrives to you in one piece and can be extracted from the package and installed into the rack in minutes

Full Line Of Products

In addition to the new Senturion, Sensatronics also manufactures:

EM1 Environmental Monitor. Capable of monitoring up to four zones; offers a low-cost way to protect rooms.

EM1 Environmental Bundle Pack. Includes an EM1 monitor, a temperature/humidity probe, two 50-foot temperature probes, and a five-license software bundle.

Model E IT Temperature Monitor. Capable of monitoring any temperature environment from -40 degrees to 140 degrees Fahrenheit; comes in either 4- or 16-port versions and is perfect for network and telecom closets.

Model F IT Temperature Monitor. A small device (about half the size of a deck of cards) that plugs into an RS232 serial port and connects to your computer for a convenient and flexible way to track temperature.

Sensatronics Senturion

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OPINIONS
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Teaching Future Or
Current Technology?

I spent much of the last six weeks ramping up for my new day-long workshop being given at DevTeach in Vancouver, British Columbia, the last week in November. It's designed to focus on Visual Studio 2005 and SQL Server 2005—"terribly old" technology as some might have you believe, as they hype the 2008 versions of Visual Studio and SQL Server. Yes, these conferences are still a month away, but I volunteered to speak at the Software Design Conference in Omaha, Neb., and the Tulsa (Okla.) Tech Fest in mid-October. I hope I got to meet some of you there.

As I've said before, these free "Code Camps" or budget conferences are a great way to get up-to-date on the technology, old and new. I'm also getting invitations to speak in next spring's "Connections" conferences in Orlando; I'll be speaking at Connections in Vegas in early November. The Connections organizers want to focus on the new and improved features in SQL Server and Visual Studio 2008. Perhaps they'll still let me speak, perhaps not.

I write a half-dozen or so new conference sessions each year. I base these conference sessions on the questions sent to me or those I see asked in the public newsgroups and MSDN forums. And yes, I've answered

questions on Yahoo! Questions. It's really disheartening to see how many kids are there trying to do stuff they shouldn't and how many "helpful" people are there to show them how. I don't know how many dozens of homework, test, and certification



WILLIAM (BILL) VAUGHN

AUTHOR William (Bill) Vaughn is an industry-recognized author, mentor, trainer, and subject-matter expert on Visual Studio, SQL Server, and ADO.NET. He's worked in the computer industry for over 30 years, including 14 years at Microsoft. He's written seven editions of the "Hitchhiker's Guide to Visual Basic and SQL Server" and three editions of "ADO.NET and ADO Examples and Best Practices." Vaughn and Peter Blackburn also wrote the best-selling "Hitchhiker's Guide to SQL Server 2000 Reporting Services." Visit his Web site at www.betav.com.

exam questions I saw being asked—and almost instantly answered.

Anyway, my sessions will include brief forecasts of those new features that can help make current designs work better in the future, but mostly they focus on how to get the existing versions of Visual Studio, Visual Basic.NET, and SQL Server to work with each other quickly, quietly, and efficiently. No, I won't be talking about LINQ, at least not until we all understand it and the unintended side effects a lot better.

Transitioning From Ancient
To Not-So-Ancient Technology

I've found that many of the developers I speak to and support on a daily basis are still transitioning from much older versions to not-as-old versions of the Microsoft development and database tools. For example, while I still get questions on SQL Server 2000, many queries focus on trying to make the transition from SS2K and MSDE to SQL Server 2005 and SQL Express.

It's also interesting to see the number of developers that are (finally) transitioning from Access/JET to SQL Server Express. Again, there are a lot of disconnects to this approach as the developer community is still (generally) ignorant of SQL Server Compact Edition. Consider that JET runs "in-process" and is easily deployed. On the other hand, SQL Server is a system service. It's not included with the OS and must be installed separately

by a user with admin rights. Access developers then hit a wall with a litany of other conversion issues. "Why didn't you tell me?" they ask. "We did tell you . . ." we counter, "but you weren't listening."

Alternative Conversion Paths

Fortunately, there is more than one alternative for those transitioning from Access/JET. As I've said before, be sure to consider SSCE (SQL Server Compact Edition). While it's not SQL Server, it's a full-blown

relational DBMS that deploys very much like JET and is fully integrated into Visual Studio. While it's a single-user DBMS, it can act as the client end (the Subscriber) in sophisticated data replication application architectures, so it's still possible to share and distribute data.

Given that Visual Studio 2008 will support the new ADO.NET Synchronization Services technology (that's built around SSCE), I think it makes a lot of sense to include this engine in any transition planning you have underway. This gives developers another low-cost way (OK, it's free) to implement a replication scenario without the expense of an SQL Server Workgroup Merge Replication host.

No, Access is not the most popular database program on the planet. I expect that Excel holds the gold medal for that honor. Case in point: My daughter Fred's company has a plethora of Excel spreadsheets to manage its account and other data. While she won't let me help ("Daddy, please, I'd rather do it myself!"), I've overheard conversations that would lead me to believe these could use a good, strong dose of SQL Server and Analysis Services. Incidentally, if you haven't seen a demo of Analysis Services, you really (really) need to. Even if all of your data is still in Excel, the new Office 2007 version implements a healthy subset of this very cool and powerful technology.

If you have a specific topic you think I should cover in a conference session or highlight here, be sure to send me some mail to that effect; I'll do my best to accommodate.

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PRODUCT OF THE WEEK

Safeguarding Data At The End Points

EndPointSecurity Filters Content Traveling Through USB Ports

by Sue Hildreth
• • •

AS MORE AND MORE employees bring their iPods, USB sticks, and PDAs into the office, the risk of their bringing in a virus, or taking out sensitive data, rises. While firewalls and network security software filters content going in or out of the network, there is often nothing to protect against content going in or out of USB ports.

While floppies have always posed a problem, they were much more limited in their storage size and less of a threat, says Andre Muscat, director of engineering for GFI Software (www.gfi.com), which makes a range of enterprise security and monitoring products. “What has changed over the past few years is the medium. These devices can hold from 1 to 8GB—and 20GB is not far away,” says Muscat. “People might download an application without anyone knowing, breaking the

licensing agreement, or bring in software that has viruses in them.”

USBs are the most common portable storage devices in companies, but they aren’t the only ones. iPods are more frequently seen in the workplace, ostensibly to play music files but with the capability to store all sorts of other data.

“I can walk out, after five minutes of copying, with virtually all of the information in the company that I have access to,” says Muscat. “An iPod can take out intellectual property that may be priceless to the company.”

Using an iPod to steal company data has become common enough to merit its own jargon, iPod slurping, in which an employee surreptitiously sucks down data onto his iPod. iPods can also bring in malware. For example, last year, Apple Computer admitted that some of its Video iPods had shipped carrying a Windows virus.

Software Filters For USB Ports

Disabling all USB ports is one possible defense, but it’s not very practical given how many peripherals use USB ports and the fact that many employees have a legitimate need to transfer and carry files on portable storage devices.

To address this issue, vendors such as GFI are adding endpoint security products. GFI’s product, the GFI EndPoint-Security application, controls access to a wide range of portable storage devices such as USB drives and CDs by placing a small agent on each desktop computer. It can be remotely deployed to hundreds of desktops via a central administrative screen.

When a user logs in to his or her PC, the agent queries the Active Directory server and obtains the permissions for that user. Administrators can thus set group-based policies on different portable devices, allowing some users to download or upload content to certain devices and restricting those rights for others. Users can be given read-only or full access writes on an individual basis.

“The IT administrator of a small business can’t be spending half his day trying to configure policy so people can work as they need to while, at the same time, maintaining security measures. We try very hard to make it as simple as possible to configure,” says Muscat.

He notes that compliance with data security and privacy regulations, as well as the ability to produce an audit trail of who was



allowed to use what files is another good reason to manage and monitor portable device usage. The EndPointSecurity software logs the files that have been transferred to or from a portable device that has been plugged in to the network, so data managers can review user activities as needed.

A ReportPack add-on package can automatically generate different reports on endpoint security, including an overview of the blocked devices; storage device usage trends; and the top 20 users, machines, devices, and applications in terms of connection activity.

Vendors Adding Endpoint Security

Richi Jennings, senior analyst at Ferris Research, a research firm that follows the antivirus market, says that many security

GFI EndPoint-Security Features

- Installs a 1.2MB agent on client
- Logs device-related user activity to both the event log and a central SQL Server
- Allows administrators to configure group-based policies via Active Director
- Provides reports on device usage and trends
- Supports any Unicode-compliant operating system

suggests they consider purchasing endpoint security software through their gateway vendor. “You want to have the same policies as you have for email,” he says. “Vendors who have a broad range of products produce the same policies [for all of them].”

So far, says Jennings, the malware threat USB drives and other such devices pose is still fairly low in relation to the security risks at the network gateway. Many company desktops have antivirus software installed to protect against viruses laptops bring in. Also, USB sticks are passive storage devices; they don’t activate programs automatically like CD players do. However, Jennings notes that may change with the advent of smart USB sticks that automatically execute applications when inserted into a USB port. For virus-writers, that enables them to create automated payloads that can be executed directly from the USB drive.

Add human gullibility into the mix, and the dangers of such USB sticks rise considerably. Jennings says employees are often quite careless about taking and using USB drives from strangers at trade shows or even from parking lots.

“I’ve heard of security researchers that have left these lying around, dropped them in parking lots, and the employees go and

Using an iPod to steal company data has become common enough to merit its own jargon, iPod slurping, in which an employee surreptitiously sucks down data onto his iPod.

software vendors are augmenting their network and desktop security suites with endpoint security technology. Because most organizations already have a gateway security product installed, Jennings

plug them in to their computers,” says Jennings. “It’s hard to stop people from doing things maliciously, but [with security software] you can stop them from doing something stupid.”

GFI SOFTWARE
ENDPOINTSECURITY

Description:

Controls access to a wide range of portable storage devices such as USB drives and CDs; provides granular control over individual or group access to files and portable devices.

Interesting fact: With a few clicks, administrators can deploy the agent to hundreds of machines, thanks to a remote deployment tool based on GFI LANguard technology.

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Fast Packet Inspection vs. Deep Packet Inspection

Different Approaches To Network & Application Performance

by Robyn Weisman

TRAFFIC ON AN ENTERPRISE network mirrors traffic on a Los Angeles freeway. An hour-long drive during the weekday rush hour can take 15 minutes early on a Sunday morning. Bottlenecks result from people driving significantly slower than the speed limit (typically in the left lanes) or slowing down to rubberneck at a fender bender. And 18-wheelers share the road with motorcycles, Ferraris, pre-Nissan compacts, and just about any other four-wheeled engine-powered vehicle imaginable.

Unlike L.A. traffic, IT admins can manipulate their networks so that the SAP application gets higher priority and consequently more bandwidth than the latest version of Halo; an ecommerce Web site obtains extra bandwidth during busy shopping hours; and C-level executives always get priority over lower-level employees, among other examples. IT administrators are able to manage this traffic through a combination of network and application performance and acceleration appliances and software.

But which appliance solution to choose? Appliances take different approaches to network packet inspection. Deep Packet Inspection, or DPI, goes beyond traditional packet inspection by monitoring all the

data contained in the packets, as well as the packet headers. Although DPI has been traditionally used to monitor data for security purposes, such as in firewalls, DPI can handle other tasks, including application acceleration and traffic management, says Vishal Sharma, principal consultant at research firm Metanoia.

Fast Packet Inspection, or FPI, looks at packet headers and certain protocol-specific details, such as HTTP or TCP layers, and offloads certain tasks from the actual application servers to free up the server CPU to focus on more mission-critical applications and allow more simultaneous sessions, Sharma says.

Fast Equals Efficient

Streamcore (www.streamcore.com), a provider of application acceleration and performance solutions, uses the FPI approach in designing its appliances and StreamSense 5.0 platform. Eric Jeux, Streamcore’s CEO, asserts that the company’s ABBA (Application Behavior-Based Acceleration) engine offers users both visibility and control in a single solution. According to Jeux, Streamcore spent two years doing R&D to create an easy-to-install intuitive solution that is automated and adaptive. The FPI model provides users with whatever the user considers to be

the relevant information needed on a reporting or real-time basis to determine application priority in an efficient manner.

According to Jeux, DPI-based appliances give users too much information. “It’s overwhelming, and oftentimes you’re getting information on applications you don’t need to know about,” Jeux says. “DPI translates information that leads to hours or even weeks of work. It may be good for an audit, but it isn’t efficient for network management.”

For his part, Yankee Group analyst David Vorhaus says that enterprises increasingly are trying to get their networks to do more with the same amount of resources. “They don’t want to have to pay to get to build out their network any further and pay for a lot more bandwidth capacity. What Streamcore and others can do is once you know exactly what’s going on in the network, then you can reliably target certain types of traffic,

certain applications, or even certain users and attach hierarchy or quality of service to that traffic to make sure that the absolute mission-critical stuff is getting pushed to the front of the queue,” Vorhaus says.

Is There Really A Difference?

Although he likes the concept of FPI and believes that a lot of potential exists for it, Vorhaus says Streamcore is using FPI as a marketing term for what is in essence DPI solutions because Streamcore’s engine for inspecting packets seems to be the same as those used in DPI solutions.

“I’m sure that [Streamcore] would point out that there is a speed differential and other slight differences, but otherwise it’s pretty much one-to-one,” Vorhaus says. “The concept of automated service control for specific applications or even for specific subscribers in a service-provider environment is something that most deep packet layers are doing, as well.”

For his part, Metanoia’s Sharma does differentiate between FPI and DPI, adding that true DPI is still too pricey in terms of cost and power consumed to be applied to application acceleration. However, Sharma says there are a slew of companies working on reducing DPI’s cost so that it may be applied to a multitude of tasks, including

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DPI, FPI & Now CPI?

Metanoia’s Vishal Sharma says that a start-up company called cPacket Networks (www.cpacket.com) recently announced a new processor with a unique architecture that performs Complete Packet Inspection, or CPI. According to Sharma, cPacket’s devices execute DPI at 10GBps; however, unlike competing architectures, cPacket’s processor consumes only six watts of power, which the

company claims is a 100-fold cost performance improvement over current solutions.

“[cPacket] intend[s] to have [its] device be used by all kinds of big and small appliance and switch-router companies, so that DPI can become the de facto way of doing” application acceleration and network performance tasks, says Sharma. “Of course, this remains to be seen.”

PHYSICAL INFRASTRUCTURE

OCTOBER 12, 2007

Three-Phase Zone Power Solution Targets High kW Loads

Geist ZP Series PDUs Expand To 34kW For Blade Server Applications

GEIST MANUFACTURING’S ZP (Zone Power) Series has expanded to offer 80- and 120-amp three-phase applications in addition to the popular 60-amp three-phase series. The products offer the ability to add per-phase and per-outlet monitoring, and they feature hard-wired connections to keep installation costs in check.

Higher kW Loads

As blade server applications continue to grow in both popularity and power consumption, high-density applications continue to require more power. Cabinet manufacturers are working to handle heat loads approaching the 30kW range. To date, no PDU manufacturer has offered a single solution capable of delivering the power required to operate a single rack full of blade servers with a single input. The new 80-amp and 120-amp three-phase ZP PDUs from Geist tackle that obstacle.

By providing up to 34kW in a single feed, blade-filled cabinets can be supplied power with a single feed or with only two feeds in redundant applications. Before this offering, four each 60-amp x three-phase feeds were required to feed any



Geist Manufacturing’s 80- and 120-amp Zone Power Series three-phase PDUs feature a removable plate (above) for hardwiring. As with other Geist ZP Series PDUs, they come in vertical and horizontal configurations



redundant applications higher than 17kW. Increased power feeds lead to airflow restrictions, increased installation costs, and decreased availability of breaker space in power distribution panels.

The new 80- and 120-amp ZP series from Geist Manufacturing feature a removable plate for hardwiring. Typical high-current cord- and plug-connected equipment can cost hundreds of dollars more per whip to deploy. Cost is added to the PDU itself by requiring a heavy-gauge cord and an expensive pin and sleeve plug. Additionally, onsite electricians must purchase and install expensive

device boxes and pin and sleeve receptacles for each deployed strip. By extending the three-phase whip directly into the convenient power distribution block in the bottom of the PDU, materials and labor cost are decreased and reliability is increased.

Per-Phase & Per-Outlet Monitoring

Both the 80- and 120-amp ZP models are available with remote monitoring options, featuring local and remote current monitoring via digital display and an Ethernet (RJ-45) connection. Geist’s new EM (Ethernet Meter) options let you:

- Monitor current by breaker, circuit, or phase
- Load balance with ease at the cabinet level
- Access without downloading software
- Receive alerts via SNMP traps/alarms
- Utilize superior GUI interface
- Download data to XML

The 80-amp version of the ZP PDU features four internal circuits, each feeding three IEC C19 receptacles for a total of 12 receptacles. The monitored version allows local and remote monitoring of the input phase currents, as well as remote monitoring of the current feeding each of the 12 receptacles. This application is ideally suited for blade servers composed of mul-

tiple IEC C20 power supply inputs, such as those sold by IBM, Dell, Sun, and HP.

The 120-amp version features four internal 30-amp circuits feeding L15-30 receptacles. The monitored version allows local and remote monitoring of the input phase currents, as well as remote monitoring of the each of the 12 phase currents in the four internal circuits. This application is ideally suited for HPC7000 server applications featuring L15-30 inputs to three-phase power supplies.

Made In The USA

As always, Geist’s PDUs are manufactured in the United States. All products are built to order, allowing customers the opportunity to have input on the product build and still have the product show up at your site on time. Geist does not require minimum orders or penalize distribution partners for drop shipped or rush orders.

Geist employees are dedicated to principles of continuous innovation, integrity, and responsiveness to customer demands. Customer service professionals are friendly, efficient, and ready to personally assist you Monday through Friday from 7:30 a.m. to 5 p.m., CST.

Geist ZP Series

80- and 120-amp three-phase PDUs that offer per-phase and per-outlet monitoring and feature hard-wired connections

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Security Strategies For SMEs

Ways To Beef Up Security While Containing The Investment

by Drew Robb
• • •

ONCE UPON A TIME, small to mid-sized enterprise security was quite a different proposition from that required in a large corporation. Not anymore. Essentially the same tools are required, deployed with a similar level of sophistication. Yet the SME has at best one or two staff in IT, and in some cases, it is someone holding the function as a double duty. Further, the budget has to be contained at a manageable level without compromising organizational data integrity.

So how do SMEs adapt? What products and technologies can SMEs use to help? What strategies should SMEs follow?

Paul Wood, a senior analyst at MessageLabs (www.messagelabs.com), recommends risk management to determine where SMEs should focus their security investments. “SMEs may be forced to make a decision as to where their defenses are better placed to minimize the risk,” he says. “A thorough risk analysis is recommended to ensure that they understand the nature of the threats facing them.”

For example, a risk assessment may uncover the fact that 90% of risk is tied up in Internet connectivity. Hackers, viruses, spyware, industrial espionage, and other threats typically use the Web as the conduit into the email. Thus, Internet security—securing email, antivirus, antispyware, firewalls, etc.—is a good place to start. By safeguarding that frontier, most immediate trouble may be averted.

Avoid Too Many Point Products

The great debate over point products vs. security suites is really a non-issue when it comes to the SME. While the large enterprise can afford to devote individuals or teams to look after best-of-breed tools such as antivirus, antispyware, and firewalls, an SME doesn’t have the administrative resources to worry about a large set of divergent tools.

The best approach for those lacking IT resources, therefore, is to buy a security product that combines several functions and requires minimal supervision. And rather than the most sophisticated products, SMEs should automate these application packages so they do the job without the need for much in the way of decisions or intervention.

“SMEs need to get hold of simple applications that reduce the IT burden and automate a lot of their day-to-day tasks,” says Ari Tammam, channels vice president at Promisec (www.promisec.com). He recommends Spectator Professional’s Clientless Endpoint Security Management, as it provides a comprehensive view and control of all the endpoints and servers in the organization from a single point. Other similar all-in-one security products include Symantec’s Enterprise Security Manager (www.symantec.com), McAfee ePolicy Orchestrator (www.mcafee.com), and LANDesk by Avocent (www.avocent.com).

Such packages automate much of the security burden and replace the need for

other niche products such as device protection, application control, inventory tools, network management and maintenance, and risk assessment and management. The result is that IT has a single point from which it can oversee the entire endpoint network.

Implement User Training

What SMEs lack in budget and toolset sophistication, they can largely make up for by empowering their workforces with knowledge. Theoretically, the more clued-in the user population is about security matters, the fewer mishaps there will be.

Interestingly, it is those who have some awareness of technology that often pose the biggest threat. Research by Vanson Bourne on behalf of MessageLabs reveals that secu-

such as Panda Security (www.pandasecurity.com), CA (www.ca.com), Symantec, MessageLabs, and others to eliminate threats.

“Organizations should consult their ISP about using a network security service such as MessageLabs Protect, in order to tackle the problems closer to the source and before they reach the local network,” says Wood.

Reinforce The Network Perimeter

For those with an internal LAN composed of at least one switch and a router or two, and for those with plenty of roaming users or where heavy wireless access is prevalent, NAC (Network Access Control) may be necessary in order to reinforce the network perimeter. NAC is designed to

The best approach for those lacking IT resources is to buy a security product that combines several functions and requires minimal supervision.

urity breaches are most often caused by junior salespeople between the ages of 26 and 35 years old, who are tech-savvy and multitask with applications such as email, instant messenger, VoIP, and the Web. Without realizing the potential dangers, they divide their concentration levels too thinly.

But this is just one employee group that requires further education on security. According to MessageLabs’ Wood, less than half of U.S. businesses provide adequate security training for their employees. Yet all staff has to become aware of the dangers inherent when using channels of electronic communication such as email, instant messaging, and Internet access.

“If you educate your users about how their actions can adversely affect the corporate network and ensure they sign that they have understood the information conveyed, at the very least they can be held responsible for their actions,” says Promisec’s Tammam. “They will think twice before contravening corporate policy.”

Get Help

But given the degree of attention that is required in understanding all of these threats and how they are continually evolving, it can sometimes be too much of a burden to run everything in-house. Fortunately, help is available these days.

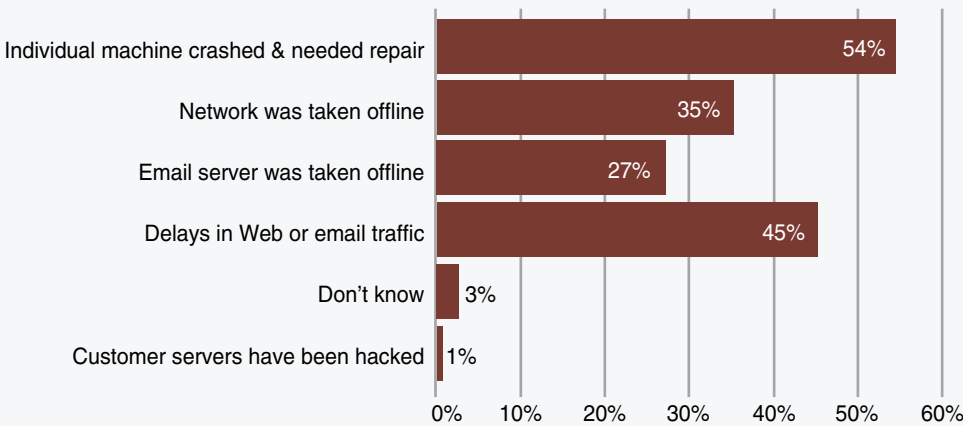
ISPs, for example, often provide a higher level of service that includes more resilient Internet and email security. These providers typically partner with companies

ensure that any endpoint accessing the network from anywhere is protected, is in compliance with policy, and cannot become a source of infection into the network. NAC vendors include ConSentry Networks (www.consentry.com), Cisco (www.cisco.com), Symantec, and Microsoft (www.microsoft.com).

“NAC can supplement a security strategy which has become eroded,” says Andreas Antonopoulos, an analyst at Nemertes Research. “It can also protect against the possibility of an infected system getting onto the network.”

U.S. SMEs: To what extent was your company impacted by a malware/virus attack?

Base: Those answering “yes” when asked if their organization had ever been impacted by malware or virus attack



MessageLabs SMB survey: March 2007
523 US SMB decision makers (conducted December 2006)

Essential Security Tools For SMEs

- ✓ Firewall
- ✓ Virtual private network for remote or home workers
- ✓ User education on security
- ✓ Intrusion prevention systems
- ✓ Encryption
- ✓ Network Access Control for some SMEs
- ✓ Antivirus
- ✓ Authentication
- ✓ Antispyware

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PRODUCTS *At Work*

Share & Share Alike

Xythos’ Digital Locker Facilitates Secure Document Sharing

by Julie Ritzer Ross

COLLABORATION AND COMMUNICATION among students and faculty, both within and beyond its four walls, rank among top priorities for LMU (Loyola Marymount University). With this in mind, three years ago, the institution launched an enterprise internal communications portal built on the Luminis platform from SunGard Higher Education (www.sungardhe.com). But the endeavor was not entirely successful; users found the portal somewhat cluttered, clumsy, and difficult to use. This led Erin Griffin, LMU’s CIO and vice president of information technology, to seek out another solution.

Beyond Internal Communications

While solving the internal communications challenges was one of Griffin’s major goals, there were other key efforts underway that she believed could be solved with technology. For example, LMU was on a mission to become more research-focused, which necessitated enhanced communication between faculty members and individuals at other entities and educational institutions. Emailing files back and forth was difficult and frustrating, and the files that needed to be shared were often too large to be passed back and forth in email attachments. To facilitate collaboration on a global basis, staff needed to rely on Web services and Web-enabled applications. In addition, LMU was providing online education in the form of e-learning and distance learning, creating additional requirements for worldwide collaboration for faculty and students.

Wanted: Compatibility With Any System

Because Griffin wanted to leverage LMU’s investment in the Luminis technology, a decision was made not to replace it but to find a solution that would enhance it. In addition to “improving the

usefulness of the portal” and “enhancing collaboration,” she says, she sought a product that would be “intuitive, easy to use, and, because our constituents do not all utilize the same platform, compatible with any client operating system.” The application also had to enhance LMU’s planned transition to a SOA (service-oriented architecture) and improve information security by reducing the risks inherent in network file sharing. After evaluating several different solutions, Griffin determined that Digital Locker from Xythos Software (www.xythos.com) best fit LMU’s requirements.

Ahead Of The Game

Griffin says implementing Digital Locker and integrating it with the existing platform was a “pretty simple,” relatively painless process. During her initial conversation with Xythos about the project, she expressed some doubt that the rollout would occur in a timely fashion and that

chose an architecture composed of HP Blade Servers (www.hp.com) running Red Hat Enterprise Server 4.1 (www.redhat.com) software, application servers that are load-balanced behind an F5 Networks BIG-IP (www.f5.com), an Oracle database (www.oracle.com), and an integrated Active Directory (www.microsoft.com) that utilizes the NetApp 3050 SAN (www.netapp.com).

Once the integration of Luminis and LionShare/Digital Locker had been completed, a pilot with almost 100 beta testers was initiated in the summer of last year. End-user training materials—including a “quick start”-type guide—were developed and distributed. The new portal was introduced to faculty in late August and formally unveiled to all first-year students in September of last year.

Most students readily embraced the improved version of the portal, but many faculty members and other LMU employees were slower to adapt to it, says Griffin. “For them, emailing files had become a very entrenched behavior that was hard to change,” she says. “A lot of people asked what had been wrong with the old method.”

Griffin and her team tried classroom training to help faculty end users jump these hurdles. However, it proved insufficient and was replaced by one-on-one training, which Griffin states worked far better.

Secure Storage & Access

According to Griffin, the solution is serving its purpose well. Instead of emailing files, LMU students, faculty, and administrative staff back up and store them on the secure Web portal supported by LionShare/Digital Locker, as well as control the viewing of documents by designating who may access them and to what extent. Likewise, individuals who are collaborating on a particular document can use the portal to access a “master”

version of that document and track changes made by any participant. No one who attempts to access or alter a given file can do so unless its owner has provided him with an appropriate URL that serves as a “ticket” for entry.

“Replacing email with an enhanced portal and Web access has made it easier for students to send documents to faculty and vice versa and for faculty to send files to each other,” Griffin says. “Just as importantly, it has given students an efficient way to share their work with others outside the university, such as graduate school admissions offices and prospective

employers. On the administrative staff side, exchanging huge documents—which was a major problem before because our internal email system does not support them—has also become hassle-free. And, we like the security of knowing that confidential files aren’t being moved back and forth in cyberspace, where anyone might see them.”

What’s more, states Griffin, the integration of LionShare/Digital Locker with Luminis is helping LMU to address other key goals, including outreach, research, promotion of excellence, and enhancement of the intellectual experience. “Our faculty members work toward these goals by spending nearly 40% of their time in collaboration with faculty at other institutions, co-authoring books or communicating with researchers there,” she says. “Without the portal, it would be very difficult to devote time to these projects.”

On The Horizon

Based on its success with the solution to date, LMU has also started using the portal to manage files that include presentations with embedded audio, as well as to store podcasts. Griffin states that going forward, almost all technology deployments at the university will involve Web-based applications. “I anticipate that tools like Xythos will be part of a loosely coupled environment, delivering information from our enterprise systems to our constituents,” she says. “The more I know about Xythos, the more opportunity I see to use it to address new and emerging problems.”



the solution would perform as promised. “I was wrong on both scores,” says Griffin. “In fact, we were live within 30 days of the date the deployment began. Everything was finished ahead of schedule.”

In preparation for the integration, the existing portal was enhanced with single sign-on capabilities, as well as by the streamlining of content location. Individual tabs for calendars, email, and LionShare (the name LMU gave Digital Locker in a move to distinguish it from Digital Locker solutions used at other institutions) were incorporated. For maximum functionality, Griffin and her team

Xythos Digital Locker

A Web-based document management application aimed at academic environments, with document and file management capabilities that allow administrators, faculty, and students to easily share and manage their files

“In moving to a SOA model, I anticipate that tools like Xythos will be part of a loosely coupled environment, delivering information from our enterprise systems to our constituents. The more I know about Xythos, the more opportunity I see to use it to address new and emerging problems,” says Erin Griffin, CIO of Loyola Marymount University.

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Safeguard Your Encryption Keys

Common Sense, The Right Tools & Good Policy Are Crucial

by Curt Harler

EVER LOSE THE KEY to a safe or a locker? The result is the same when the key to a data encryption program is lost. You are locked out. That’s why it is imperative that small to midsized enterprises keep track of their keys, both for lockers and ciphers.

When data is encrypted, it becomes unintelligible to anyone but the intended recipient, who must decrypt it so it can be read. A cipher, a cryptographic algorithm, is used to encrypt and decrypt the data. Secrecy is not based on the cipher so much as it is on the key. The key is a number that is tied to the cipher to encrypt or decrypt the information.

Lose the key, and you are in hot water. Some SMEs track all keys centrally. Others let employees track their own keys. But what happens if a worker leaves under less-than-optimal circumstances—if he quits, is fired, or dies? With good encryption, it is nearly impossible to recover secured data. That’s why good key management is required.

“Use a product that has centralized key management and storage and make sure you regularly back it up,” says Richard Combs, CDW solution architect. CDW provides technology products and services to education, business, and government clients. Companies such as PGP (www.pgp.com) and RSA (www.rsa.com) offer this as part of their product set, along with centralized policy settings, which eases the administrative workload, he adds.

Be sure the product you purchase has a feature that allows decryption if the key is lost. “This is a necessity if a user leaves the

organization and does not give anyone their privately generated keys or pass phrases,” Combs says. This also is true for SMEs that anticipate changing systems. “Make sure you can unencrypt data with the old system and re-encrypt it with the new system,” Combs advises. Using industry-standard encryption schemes helps in migration.

“Be sensible about key lifestyle,” says John Dasher, director of product marketing for PGP, which specializes in email and data encryption software for enterprise data protection. He recommends giving the enterprise the option to track keys centrally. Even employees with private keys should be limited to one key per employee. “Sensible policy management must be uniformly applied and pushed out to every employee,” Dasher says.

Lost Keys

Hope for restoring a file depends on how the file was encrypted and whether the key is truly lost. “If the file was encrypted using application-level encryption (e.g., Microsoft Word or Adobe Acrobat), it might be possible to recover the file,” Combs says. Some older applications used weaker encryption schemes. Tools are available to decrypt files encrypted by specific applications.

“Given enough time and computing power, you can try a brute-force attack,” Combs says. Investing the time and money in this approach depends on the value of the data. “Data of less value than the time and effort to run a brute-force attack is usually just re-created. Brute-force attacks do not work well against all forms of encryption,” he notes.

Dasher says he feels brute attacks are hopeless. “It will take years, even with modern computing power,” he says. “Frankly, the data is lost.”

If the file was encrypted using a commercial encryption product, see if the vendor has a method of recovering it. Both PGP and RSA have proprietary methods of recovering data when an encryption key is lost, Combs says. In other cases, there is nothing you can do: The data is, indeed, gone.

Safe Storage

Good policies prevent that from happening. Combs repeats the preferred method of key storage is centralized key management and storage. “Keys should not be stored on the same device that contains encrypted data,” he says.

If this is not possible, then the keys should be stored on a medium that does not allow tampering. “This medium should be stored in a secured location away from the encrypted data,” he adds. This requires a trade-off between ease of access and security.

“If you make it too hard to store and retrieve keys, people will not want to use encryption, but if you make it too easy, anyone can have access,” Combs warns.

Dasher says the PGP Universal platform is architected to provide key management and policy management as the cornerstone of the system. Then email or document encryption can be added on top. “SMEs want to encrypt thousands of files—or have a thousand employees encrypt files. You don’t want a different key or password for each,” he says. “That makes it too complicated and too expensive. Maintaining such a system is a nightmare.”

He says the best approach is to build a common key policy, with management and logging, and build applications on that platform. “Like a hardware blade architecture,” Dasher says. Laptop encryption might be first, then email, and then other things.

SMEs in a position to avoid future lockouts should give the enterprise the option to track keys centrally. Dasher suggests key splitting as a way to provide security both for workers and the firm. In this case, each of five executives—the head of human resources, CIO, CEO, and some other key

Key Tips On Key Management

- Use industry-standard products with a proven track record.
- Make sure you have processes in place that cover what you encrypt and how you encrypt it.
- Stay informed of any regulations that apply to your business and could relate to data encryption, such as HIPAA, GLBA, or PCI (Payment Card Industry).
- Make good backups of your data, including the encrypted data and the keys. The backups should be stored in separate locations (that is, don’t store the encrypted data with the keys).
- If data has been encrypted with a legacy application, make sure you have hardware and software capable of running that legacy application or migrate the data to a newer application before retiring the old application.

Encryption: Not Just For Networks

Data from mobile wireless products such as RIM’s BlackBerry (www.rim.com) can be encrypted, as well as information on laptops and networks. The encryption is fairly inexpensive, and because RIM uses the APIs (application programming interfaces) from the encryption vendor, it is able to develop the security in a short time without having to write keylogging or reporting applications.

Among the advantages of encrypting remote devices is that it combines email security with the mobility and flexibility of BlackBerry devices. It also gives sender-to-recipient security capabilities for wireless mobile users. And the IT or help desk staff does not need to learn another system to support remote wireless users.

executives—gets part of the key. It requires three of the five of them to activate it. That shields against abuse but allows the firm reasonable access. **P**

Fast Packet Inspection vs. Deep Packet Inspection

Continued from Page 25

application acceleration, and so that IT managers can use the minimal number of appliances to achieve their security and performance goals.

Sharma goes on to say that FPI-capable devices have taken on computing-intensive tasks associated with SSL processing, including IPsec cryptographic operations, compression, or protocol-splicing for TCP for server load balancing, among other actions. These devices “can produce gains

in performance [between three-fold and 10-fold], relative to having the servers themselves do these tasks, a significant gain indeed,” Sharma says.

A Crowded Space

Sharma says he is aware of several companies offering application acceleration solutions that use FPI or something straddling between FPI and DPI technologies, in addition to Streamcore. Bivio Networks’ 2000 and 7000 Series (www.bivio.net) lean

more toward using DPI for application acceleration while attempting to keep their costs comparable to typical appliances. Two other companies, Cavium Networks (www.caviumnetworks.com) and Tarari (www.tarari.com, which LSI Logic recently acquired) make specialized processors that are bundled with other vendors’ products, such as firewalls and filtering devices.

For his part, Vorhaus recommends several smaller players that make application acceleration solutions, including Procera

Networks (www.proceranetworks.com), Allot Communications (www.allot.com), and SandVine (www.sandvine.com), along with Cisco Systems (www.cisco.com), which purchased P-Cube in 2004 for its Service Control Engine. In addition, Vorhaus recommends Anagran (www.anagran.com) routers as an alternative to other solutions. Using what the company calls its Fast Flow Routing Architecture, Anagran’s routers work by directly influencing the path of packets. **P**

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WHAT'S HAPPENING

Fishing For Phishers

Barracuda Networks Provides World-Class Malware Protection

by Tim Warner

• • •

ANY IT MANAGER WORTH his or her salt understands the vital importance of keeping the corporate network as free as possible from email spam, viruses, and spyware. Consider this: What is your organization’s estimated or actual annual revenue loss due to system downtime and employee inefficiencies produced by email spam and malicious code?

Without doubt or question, Barracuda Networks (www.barracudanetworks.com) understands these issues fully and, to that end, has developed industry-leading technology that enables systems administrators to sleep soundly at night knowing their networks are “clean.”

How Its Technology Works

Barracuda Networks, a privately held company started in December 2002 and headquartered in Campbell, Calif., manufactures cutting-edge email and Web security appliances, application server load balancing, instant message protection, and message-archiving solutions. According to Stephen Pao, vice president of product management at Barracuda Networks, companies and organizations of all sizes rely on Barracuda Networks solutions for four key reasons:

Up and running in 15 minutes. Barracuda Networks’ products are easy to deploy and use because they don’t require software installation or network modifications. For example, the Barracuda Spam Firewall is installed “in line” with your organization’s SMTP (Simple Mail Transfer Protocol) email server. The firewall then transparently scans not only incoming and outgoing message headers but also message content in order to detect undesirable content.

Expertise not required. IT staff members don’t have to be experts in particular solutions, as Barracuda products have an intuitive Web browser-based user interface that helps simplify product management. The idea is that a systems administrator can manage a Barracuda product from anywhere in the world, provided that he or she has access to an Internet connection and a Web browser.

No support phone trees. Support technicians are available 24 hours a day, seven days a week to answer customer calls and provide personalized support. The focus on providing user-friendly customer support is intended to prevent customers from being caught in seemingly endless call-routing loops.

Automatic updates. Barracuda Energize Updates, an automatic update system, comes with every Barracuda solution to help ensure customers have continuous protection against the latest threats.

All of Barracuda’s appliances run on a hardened version of Linux. Specifically, Barracuda Networks engineers built their operating system kernel from source code and did not rely on any commercial Linux distribution. As a result, Barracuda appliances benefit not only from the de facto OS security Linux offers but also from an operating system that is tuned specifically to its primary installed application.

Try Before You Buy

Pao explains his company’s unique product licensing model: “Barracuda Networks does not charge per-user, per-port, or per-server licensing fees, making its solutions the most affordable integrated network solutions available.”

Another innovation Barracuda embraces is letting prospective customers request

evaluation units to test their functionality in a production environment prior to purchase. “The 30-day evaluation program has been highly successful for Barracuda Networks, as our product portfolio is designed to offer a comprehensive feature set that is affordable and easy to install and use,” Pao explains. “Prospective customers can spend 15 minutes installing a Barracuda Networks product and see immediate and tangible results in email and Web security, content filtering, IM security, application server load balancing, and message archiving.”

An Emphasis On Customer Support

Barracuda operates an advanced 24/7 security operations center called Barracuda Central, in which research engineers and proprietary heuristic software work diligently to monitor and block the latest Internet security threats. Pao says, “Barracuda Central has the most diverse data corpus collection, drawing from submissions from more than 50,000 Barracuda Networks products in more than 80 countries and 17 languages.”



Virus/spyware/spam email/spam IM definition files define the core functionality of any anti-malware network security appliance. To this end, Barracuda relies on a combination of proprietary and open-source resources for virus and malware signatures, intrusion prevention system databases, policy definitions, spam fingerprints, and Internet Protocol addresses. “Barracuda Networks customers can also maintain their own customer set lists, such as allowed and blocked IP addresses,” Pao explains.

Barracuda Networks offers two-tier (Basic and Enhanced) technical support to

its customers. “All technical support phone calls are handled by a support team located at Barracuda Networks’ corporate headquarters or from local offices around the world,” Pao says. “Technical support is available 24/7 via phone, email, or live chat. We also offer online resources for opening a support case, a searchable Support Solutions knowledge base, a technical forum, downloadable whitepapers, training videos, and training events.”

Central to the customer service philosophy at Barracuda Networks is a commitment to avoiding phone trees in order to respect customers’ and partners’ requirements for timely assistance and human interaction without excessive call routing.

Marketing Focus

Regarding the Barracuda product portfolio’s targeted market, Pao says, “Barracuda Networks predominately focuses on the business-to-business market. That said, if a private home user operates their own email server, the Barracuda Spam Firewall 100 is a perfect fit to protect against spam and other email-borne threats and is reasonably priced, as well.”

Speaking of the Barracuda Networks product portfolio, the initial line of Barracuda Spam Firewall appliances was launched in July 2003, a mere seven months after the company was founded. Barracuda Networks introduced the Barracuda Web Filter in April 2005, the Barracuda IM Firewall in September 2005, the Barracuda Load Balancer in November 2005, and the Barracuda Message Archiver this past July. Most recently, Barracuda added Barracuda Web Application Controllers to its portfolio, following the acquisition of NetContinuum.

Since its inception, Barracuda Networks continues to gain wide acclaim from customers, media, and IT analysts by offering exceptional customer service, top-notch products, and engaging partner programs. Pao and his fellow professionals at Barracuda Networks understand that while most “in the trenches” IT administrators wear many hats, practically no one person has the time, aptitude, or interest to master all facets of IT security. ■

THREE QUESTIONS

High Quality & Flexibility

Zippy USA Aims For The Future With Advanced Offerings

by Julie Sartain

ZIPPY USA (www.zippy.com) develops power supplies, multilayer piezoelectric inverters, fiber-optical adapters, and a collection of other products. Geoffrey Shih, technical support manager, and Alex Lo, project manager, share some insight into the company.

■ What are the biggest IT-related issues facing today’s small to mid-sized enterprise?

Product reliability is definitely No. 1, and flexibility follows, notes Lo. Zippy produces high-performance power supplies through continuous effort in R&D and then applies the best-quality components into those products. “In terms of flexibility,” says Lo, “we know that a standard unit very rarely meets our customers’ requirements, so we specialize in modifying existing products, alongside an extensive library of electrical circuits, to provide a solution precisely tailored to our customers’ needs.”

This year, Zippy has focused on three main areas:

Increasing efficiency. With server farms of up to thousands of computers, efficiency leads to noticeable savings. Zippy pushes the average efficiency of its systems well above 80%.

Reducing noise. With increases in efficiency come decreases in heat generation and, with advanced speed control circuitry, new, quieter power supplies are essential. These systems provide true 800W of redundant power with higher power efficiency, low inrush, and low noise.

Inrush current. Inrush current (aka input surge current) is the maximum instantaneous input current that an electrical device pulls when it’s first turned on. This is a more esoteric engineering requirement but an area Zippy is refining.

■ What should *Processor* readers know about your company’s products?

“The niche that we hope to place ourselves [in] is, above everything else, high flexibility and high quality,” says Shih. “When we talk about mechanical specification, we mean the form factor or shape of the supply. Whether it’s PS/2 or server systems, many elements of the power shape are standard. However, as a result of our flexibility in design and high power density, we still had the opportunity to innovate and, in many instances, set the standard that others have followed.”

Zippy has a very granular production method. From the beginning, every system and setup has been designed with the idea that each customer’s supply will be unique. The variations can be anything from changes in cable harness, form factor, and fittings to modifications of the internal components. This is very cost-effective for customers that don’t want a brand-new design but also don’t need a power supply customized to their application.

■ What makes your company unique?

Zippy is part of a corporation of companies, many of which have already moved their production facilities to China. Zippy made the conscious decision not to relocate. “We made this decision because we knew that the economic realities of Chinese production would have a negative effect on our two ideals: the quality of our final product and the flexibility to build anything from one unit to 10,000 units, with each production lot unique to a given customer,” says Lo.

Zippy believes that this industry is one where reliability differentiates the truly superior products. “If the CPU is the brain of a system, the power supply is its heart, and often the value of losses incurred in a single failure can exceed the value of the power supply itself,” says Shih. “We firmly believe that the power supply industry is one built on trust.”

The mission of any power supply company should be to engender the utmost confidence in both the technology and quality of its products, notes Lo. Quality in R&D, design, production, and components is what leads to this outstanding reliability. The peace of mind Zippy offers is what its teams provide to its customers. Lo adds, “This is what makes us unique.”

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